

NO REMUNERATION: outdoors; respectable; 38; desiring further experience; services 9 till 5 daily; small business, provincial town or London. 102/14, Office of this Paper.

ENGAGED after 6; outdoors; seeks part-time employment; excellent references; qualified Dispenser; City, West-end, and provincial experience. Denis, 87 Cornwall Road, Bayswater.

DISPENSER; disengaged middle September; 28; in or out doors; 12 years' experience; good references; London preferred, or abroad. Baldock, c/o T. Hirst, Chemist, Boscumbe, Bournemouth.

LADY Dispenser (Hall qualification), with some experience, desires engagement (Locum or permanency) with private Doctor or Institution; free now. "L. E." 4 Station Parade, Norbury, S.W.

CHEMIST-ASSISTANT teaches Dental Work, Extractions (with gas), Stoppings, Impressions, Fitting of Artificial Teeth, &c.; full tuition one month. Jones, 132 High Street, East Ham, E.

YOUTH (16), with some knowledge of the trade, seeks an Apprenticeship in a Dispensing business where he would have time for study; indoors; moderate premium. Apply, 100/11, Office of this Paper.

UNQUALIFIED Assistant (aged 23), German, disengaged, also speaks fluently French and English, with English practice (Montreux, Baden-Baden), seeks place for October 1. 225/23, Office of this Paper.

WANTED, by young qualified Chemist, with London, Provincial, and West-end experience, position of trust wherein business aptitude and general capability command a liberal salary. 101/23, Office of this Paper.

QUALIFIED Chemist, 30 years old, with town and country experience and knowledge of Photography, desires a situation in a good-class business near London; height 5 ft. 7 in.; abstainer. 98/19, Office of this Paper.

To put up Stock, Dispense, and help generally, with gentleman, in or near London; able and willing to coach for Minor; or part-time; tall, gentlemanly, and obliging; splendid references; outdoors. 102/24, Office of this Paper.

GERMAN Assistant (willing to do any work), speaking French perfectly and English pretty well, wishes place in England on moderate terms at beginning of October or later. Apply to Dr. Crone, Apotheker, Bad Ems, Germany.

PHARMACEUTICAL Chemist, married, no family, middle-aged; (through misfortune) offers his services as Manager, where honesty, sobriety, push, and hard work would be appreciated; abstainer and good Prescriber; this is genuine; moderate salary accepted. "Chemist," Hambledon, Hants.

WHOLESALE.

COUNTERHAND. Wet, Dry; good experience; aged 19. "Rhei," 10 Lockhurst Street, Clapton.

TRAVELLER. with good experience, desires re-engagement with firm, Wholesale Druggists. 105/37, Office of this Paper.

To manufacture B.P. Preps., Formulæ, &c., and to Travel; 20 years' varied experience. "Chemist," 13 Percy Street, W.

SITUATION as Traveller required; 27 years with Chemists; Drugs or Sundries preferred, but not essential. Apply, Kirkham, Bury St. Edmunds.

QUALIFIED Chemist (aged 33 years) desires engagement as Representative to good firm; London or Provinces. "Cutol" (105/31), Office of this Paper.

TRAVELLER or Agent; 30; Druggists' Sundries, Drysalts, and Perfumery; good Wholesale connection, England and Ireland; excellent references. 101/19, Office of this Paper.

TRAVELLER, with good connection amongst Chemists in London and suburbs; abstainer; good references, also guarantee. "A., " 105 Bramfield Road, Wandsworth Common.

TRAVELLER, 10 years' sound connection in Kingdom amongst Chemists, Druggists, is open to Represent first-class house; salary or commission and expenses. 106/2, Office of this Paper.

AGENCIES.

3s. 6d. for 50 words or less; 6d. for every 10 words beyond.

GENTLEMAN (37 years of age), who has been with present house 20 years, and calls on Chemists and Stores, desires one or two good Sole Agencies, which he would thoroughly work in London; only genuine offers entertained. Address letters 105/33, Office of this Paper.

MISCELLANEOUS.

Special charges are made for Advertisements under this heading, which can be obtained on application.

Advertisers are reminded that if they wish replies to their Advertisements addressed to the Office of "The Chemist and Druggist" under a figure or nom de plume, to be forwarded, an extra charge of Sixpence is made, and such amount should be added to the remittance for the Advertisement. If letters are called for, no extra charge is made.

CHEMISTS starting business should call or write to Bygrave & Sons, as we are prepared to fit any sized Chemist Shop in good style at the very lowest possible prices; special terms to small capitalists, no extra charge being made. Bygrave & Sons, Shopfitters, 239 City Road, London.

SECONDHAND Chemist's Fittings for Sale cheap, comprising handsome Fitting, 12 ft. long, with range of 60 Drawers, Poison-cupboard, &c., Screen, Wall-case, Counter (glass front), Counter-case, Specie-jars, Carboys, &c. Rudduck & Co., Chemists' Fitters, 262 Old Street, London, E.C.

CUSTOMERS wanted by J. Albert Schmidt, Solingen (Germany), for his Specialities:—The Jacatra self-acting Cook (every housewife buys it) Preservatif; L'Absorbeur, Manicure and Pedicure Instruments, Face-massage Instruments, Razors and Barber Shears, Advertising Specialities, Sponge-cleaner, Home Trainer and Developer; Get Healthy and other Specialities. Illustrated Lists post free.

CHEMISTS' FITTINGS (Secondhand).—22 ft. 6 in. run of shelving, drawers, &c.; 7-ft. handsome dispensing-screen, mirror centre; 2 mahogany window enclosures; 3 swan-neck carboys; desk case, serving counter, counter-case, pill-machine, steps; all modern and in good condition; 50 guineas the lot.

PHILIP JOSEPHS & SON, 93 Old Street, London, E.C.

DENTAL work for the profession; high-class work; very moderate charges; prompt delivery. Harry Petty, Dartmouth Road, Olney, Bucks.

McADAM & TUCKNISS, Sharedealers, 30 Tranquil Vale, Blackheath, London, S.E. Telephones 81 and 81A Lee Green.

SHARES ON SALE (free of all commission and subject).—61 Camwal preference 15s. 6d., 31 ordinary 9s. 3d.; £100 Meggeson 4 per cent. debenture £98 10s. (with dividend due October 1); 225 W. Jameson (Soap) ordinary 18s. 4d. (with dividend 1s. 1d. a share for half-year); 100 Benger's ordinary 21s. 6d.; 100 Vi-Cocoa preference 15s. 6d.; 20 Lever Brothers' preference £12 3s. 9d.; 20 Wilkie & Soames preference £11 7s. 6d.

WANTED (subject).—100 Camwal preference 14s. 3d., 100 ordinary 7s. 9d.; 200 Benger's ordinary 20s. 9d.; 100 G. B. Kent preference 20s. 3d.; 10 Evans Lescher & Webb preference £5 6s. 3d.

List of shares for sale and wanted sent free on application. Highest references to Bankers and many Chemists with whom we do business.

STIRLING'S AIDS TO PHARMACEUTICAL STUDENTS.

All post free throughout the world. Descriptive List post free on request.

Notes on Dispensing. Pocket Edition. Interleaved. 1s. 6d.

Pharmaceutical Latin and Prescription Reading. 1s. 6d.

Præscripta Autographa. With Key. 2s. 6d.

Materia Medica Synopsis, B.P., 1898. 2s.

Synoptical Tables of the British Pharmacopœia, 1898. 1s. 6d.

JOHN GOWER, Publisher, Waterloo, LIVERPOOL.

More Company News.

PHOTOGRAPHIC INDUSTRIES (LIMITED).—Capital 50,000*l.*, in 1*l.* shares (30,000 7 per cent. cumulative preference). Objects: To acquire (1) a freehold factory in Ghent, erected and fitted under the supervision of Dr. Findlay; (2) British patent No. 5,948 of 1904, relating to the manufacture of films; and (3) the benefit of all improvements and further inventions relating to the manufacture of films discovered by the vendors (Dr. J. Findlay and Major F. E. Freeth), while they hold the position of joint managing directors, with the right to apply for and obtain patents in respect thereof, in the British dominions and foreign countries; and to carry on the business of manufacturers of photographic papers, dry plates, films, cameras and photographic apparatus, chemicals, materials and accessories, lithographers, printers of picture postcards and advertisements, &c. Purchase consideration, 28,500*l.*, payable as to 8,500*l.* in cash and as to 20,000*l.* in ordinary shares. Registered office, 25 Victoria Street, S.W.

MERRILL'S (LIMITED).—Capital 1,000*l.*, in 1*l.* shares. Objects: To acquire from H. W. Merrill the business carried on by him at Coronation Buildings, Stacksteads, and to carry on the business of chemists, druggists, artificial-teeth manufacturers, patent-medicine vendors, Italian warehousemen, mineral-water manufacturers, oil, paint, and colour merchants, grocers, confectioners, general providers, &c. The first subscribers are: H. W. Merrill, Coronation Buildings, Stacksteads, Lancs, chemist's manager; H. H. Williams, 1 Portland Terrace, Hospital Lane, Boston, Lincs, chemist's manager; T. Merrill, 5 Church Street, Stacksteads, Lancs, woollen carder; J. J. Greenoff, 1 Aldur Street, Rawtenstall, Lancs, chemist's traveller; J. Ball, 70 Scotland Road, Blackburn, chemist's traveller; Mrs. M. Merrill, Coronation Buildings, Stacksteads, Lancs; and D. H. Lonsdale, Ivy Cottage, Higher Tunstall, Stacksteads, chemist's traveller. No initial public issue. Registered without articles of association. Registered office, Coronation Buildings, Stacksteads, Lancs.

EGYPTIAN SALT AND SODA COMPANY (LIMITED).—A lively meeting of this company was held at Winchester House, E.C., on August 23, Sir Lepel Griffin presiding. The meeting was summoned at the instance of Messrs. Milton, Royle, Evans, Smart & Turner, who are shareholders, to consider proposals to increase the number of directors, and, after due examination, to purchase the business, property, and undertaking of the Huileries et Savonneries d'Egypte. The directors had issued a circular, in which they characterised the proposed purchase as "an impudent attempt to obtain control of the salt-monopoly of Egypt at present enjoyed by this company." The proposals were moved by Dr. Milton and seconded by Mr. Preston. The Chairman deprecated the tone of Dr. Milton's remarks, and threatened the resignation of himself and his colleagues if the resolution of amalgamation were carried. The proposals were then put and lost, and a poll was demanded, to take place in October.

GERMAN CHEMICAL COMPANIES.—Although most of the large chemical manufacturing companies in Germany are in a prosperous condition when regarded from the standpoint of their annual balance-sheets, there are others which are far from being in a satisfactory state, and their financial results, curious to say, have all been published after the issue of the returns of the remunerative works for the past year. For instance, the Billwader Chemical Works (late Hell & Stahmer), of Hamburg, which has a share capital of 125,000*l.*, has earned for 1903 profits amounting to 10,935*l.*, as against 12,240*l.* in the previous year, but almost the entire sum has been written off for depreciation. The payment of a dividend is, therefore, out of the question, while no distribution whatever was made in each of the two preceding years. This instance is, however, eclipsed by the chemical works (late P. Romer & Co.) of Nienburg, which has a share capital of 60,000*l.* For five years this company has been unable to pay any dividend, and the 1903 period, with a net profit of 25*l.* as against 1,471*l.* in 1902, adds another to the list of unsatisfactory years. The Gernsheim-Henbruch Chemical Works of Mannheim has a share capital of 30,000*l.*, and the gross profits for 1903 amount to 4,942*l.*, as compared with 4,668*l.* in the previous year. After meeting working expenses and depreciation, the accounts show a loss, which is, however, compensated by drawing 4,150*l.* from the guarantee and special reserve funds. A fourth instance is afforded by the Ottensen-Brandenburg United Chemical Works (late H. Frank), of Hamburg, which is unable to make any return to the shareholders. The past year shows a profit balance, but this has been carried forward to the next account, and the directors express the hope that for the current year it will be possible to commence the payment of dividends. The last case cited is that of the Opladen Chemical Works Company, of Opladen, which was only formed in 1903, but is now to undergo reconstruction.

"Elijah" on Druggists.

THAT colossal humbug the Rev. Dr. Dowie, of Zion and Chicago, selects the downtrodden druggist and the doctor as two of the objects of his vituperation. His sermons are mainly invective of the vulgarest character, and the selections given herewith are from an address delivered by the "Profit" in the Chicago Auditorium on November 30, 1903:

SORCERERS.

That word in the Hebrew is *kashaph*. In the Septuagint it is translated by the word *pharmakoi* (Greek *pharmakos*), which is the word used throughout the New Testament for sorcerer. It means a maker, a vender, a dispenser of deadly poisons. It means, in plain, ordinary English, a druggist or pharmacist, which is from the Greek word. There is no other meaning for it. There is nothing that to-day is cursing this earth more than the transformation of the fruits of the earth into liquid fire and distilled damnation in every form. It is the alcohol which you get in places licensed to produce every vice and destroy every virtue; licensed to destroy every power of self-control and madden until crime is easy; licensed to destroy food and create famine. So with these drugs, which are composed largely of narcotics, to which class this alcoholic poison belongs. "In vain dost thou use many medicines," is the word of God.

There is not one kind word spoken for doctors or drugs throughout the whole Bible, from Genesis to Revelation. When anything is said about doctors or drugs, it is generally in terms of supreme contempt.

Doctors have denounced everything that has preceded them. Sir Alexander Simpson declared, a short time ago, that if every book on medicine in Edinburgh University Library, and every book in the library of the College of Surgeons and Physicians, which had been printed for more than ten years, were destroyed, it would be a great blessing to the world. Among them he would have destroyed all the books written by his uncle, who was considered in his day to be the greatest authority upon gynaecology in the world. Men who tell us that drugs and doctors are divinely commissioned had better give us some proof of it.

The germ theory is the most stupid thing of all. Some doctors have been rising up lately, saying, "Do not kill all the microbes; some of them are good." The microscope has not yet been able to tell us which are good. "Ah! But we can kill the parasitical masses of the bacteria of tuberculosis. At any rate, we can drive them away from the diseased tissue." The late Professor Virchow said, when talking of Koch's lymph, "Oh, yes, that is true. His lymph does drive the bacteria from the diseased tissue into the healthy tissue and kills the patient twice as quick."

God will be a swift witness against the *pharmakoi*, the sorcerers. Do you know that the druggist is among those mentioned in the Revelation who do not enter heaven? Among those who go to the Great Lake of Fire, we find, starting with the cowards (who are the "fearful"), the unbelievers, murderers, whoremongers, sorcerers (druggists), and all liars put together. We do not merely do without the drug, but we say that the drug is deadly and devilish, and that it creates madness, shatters, destroys, and sends down to posterity blighted, miserable offspring.

THE FOLLOWING EDUCATIONAL INSTITUTIONS are advertising in this issue:

- South London School of Pharmacy, 325 Kennington Road, S.E.
- Metropolitan College of Pharmacy, 160 to 162 Kennington Park Road, S.E.
- London College of Chemistry, 323 Clapham Road, S.W.
- Imperial College of Chemistry, 49 to 51 Imperial Buildings, E.C.
- City of London College, White Street, Moorfields, E.C.
- Burlington Correspondence College, 8 Crescent Grove, Clapham Common, S.W.
- Manchester College of Pharmacy, 225A and 227A Oxford Street, Manchester.
- Northern College of Pharmacy, Burlington Street, Manchester.
- Edinburgh Central School of Pharmacy, 26 Clyde Street, Edinburgh.
- North of England School of Chemistry and Pharmacy, 55 Northumberland Street, Newcastle-on-Tyne.



A Weekly Journal of Pharmacy and the Drug-trade.

ESTABLISHED 1859.

Head Office: 42 Cannon Street, London, E.C.

Telegraphic Address: "Chemicus London."

Telephone No.: 852 Bank.

Branch Offices: ADELAIDE, MELBOURNE, AND SYDNEY,
AUSTRALIA.

SUBSCRIPTION RATES.

Ten shillings a year in advance, post free to any part of the world, including a copy of *The Chemists' and Druggists' Diary* next published. Single copy, 4d.; Summer or Winter Number, 1s.; *Diary*, 3s. 6d. Postal orders and cheques to be crossed "Martin's Bank (Limited)."

AS AN OFFICIAL ORGAN

THE CHEMIST AND DRUGGIST is supplied by subscription to the whole of the members of NINETEEN PHARMACEUTICAL SOCIETIES, viz. :—

Pharmaceutical Society of Ireland.

South African Phar.
Assocn.
Natal Phar. Soc.
Rhodesia Phar. Soc.
Cape Colony Phar. Soc.
Transvaal Phar. Soc.
Kimberley Chem. Assoc.
Orangia Phar. Soc.
Trinidad, W.I., Phar. Soc.
Central Phar. Assocn., N.Z.

Canterbury (N.Z.) Phar.
Assocn.
Otago (N.Z.) Phar. Assocn.
N.S.W. Phar. Soc.
Queensland Phar. Soc.
S. Australia Phar. Soc.
Tasmania Phar. Soc.
W. Australia Phar. Soc.
C. and D. Soc., Ireland.
Irish C. A. Assocn.

CONTENTS: Vol. LXV. No. 9 (Series No. 1,283).

PAGE	PAGE
Adulterated Cream of Tartar	399
American Notes	388
Association Ballad	394
Bankruptcies and Failures	406
Births	392
British Association	369
Business Changes	403
Colonial and Foreign News	388
Corner for Students	382
Correspondence	407
Deaths	392
Editorial Comments :—	
Educational Problems	396
Belladonna-culture in U.S.A.	397
Hong-Kong Poison Regulations	398
Notes	398
English News	393
French Codex	416
French News	387
Gazette	403
In Yokohama	367
Irish News	385
Legal Queries	408
Legal Reports	400
Leprosy-cure	415
Marriages	392
Model Hospital Pharmacy	406
New Companies and Company News	402
Observations and Reflections	395
Personalities	393
Recent Wills	405
Reviews	403
Scientific Progress	394
Scotch News	386
South African News	413
Trade-marks Applied for	416
Trade Notes	403
Trade Report	409

THE CHEMISTS' AND DRUGGISTS' DIARY, 1905.

This work is now in active preparation, and intending advertisers should make sure of getting space in it by at once addressing the Publisher of THE CHEMISTS' AND DRUGGISTS' DIARY, 42 Cannon Street, London, E.C.

The DIARY is presented free to all subscribers to THE CHEMIST AND DRUGGIST, and being in daily use by thousands of our readers throughout the year is the most esteemed and valuable advertising-medium of the kind in the world. Remember that with our unique foreign and colonial circulation it is necessary to go to press at an early date, so that the DIARY may be delivered to subscribers abroad before Christmas.

Summary.

A CONTINUATION of the "Company news" appears in the Supplement.

SOME of Dowie's rhodomontade about druggists is given in the Supplement.

WHAT the medical journals think of Mr. Idris's Conference address is summarised on p. 398.

DR. JAMES S. ASHE gives particulars of a new and promising treatment for leprosy (p. 415).

SOME of the formulae which are going to appear in the New French Codex are given on p. 416.

LORD AVEBURY read a paper before the British Association on the shape of the stems of plants (p. 390).

A DESCRIPTION of a model French hospital pharmacy and a portrait of the head pharmacist are given on p. 406.

SIR JAMES DEWAR hopes that by means of cocoa nut charcoal he may approach nearer to absolute zero (p. 390).

THE Inverness Chemists' Association's ballad on p. 394 may be sung to the tune of "The Bluebells of Scotland."

WHAT SCIENTISTS THINK of the Board of Education's new scheme of leaving-certificates is briefly given on p. 391.

THE presence of starch as an adulterant in cream of tartar is the subject of a short note by Mr. E. J. Millard (p. 399).

THE WAY Cape Colony encourages the pursuit of botany in the high schools and colleges of the Colony is indicated on page 399.

THE Great Zimbabwe Ruins, Rhodesia, have been explored by Mr. R. N. Hall. We give a photograph of these interesting relics (p. 414).

THE REPRODUCTION given on p. 404 of a Japanese prescription shows the kind of script that is brought into a Yokohama pharmacy.

THE DIFFICULTIES of provincial pharmaceutical education, à propos of Mr. Paterson's scheme to the Federation, are commented on on p. 396.

THE DEATHS this week include that of Mr. Adam Gibson, of Edinburgh, Mr. John Shaw, of Liverpool, and Mr. W. J. Sawyer, of Brighton (p. 392).

THE ANALOGY between the gaseous and dissolved states and the molecular weights of dissolved salts are the subjects of this week's Corner for Students (p. 382).

THE PHARMACEUTICAL SOCIETY's crusade against the sale of nicotine by ironmongers and seedsmen has been the means of securing four convictions (p. 400).

HONG KONG is the latest British possession to make regulations dealing with the sale of poisons. The by-laws are founded on the Pharmacy Act, 1868 (p. 398).

THE subject of drug-growing in the United States is an interesting one, and the further particulars of the experimental cultivation of belladonna on p. 397 will be welcome.

XRAYSER'S OBSERVATIONS are mainly on Mr. Balfour's address to the British Association, and his reflections include a biography of the late Dr. Thomas Young, of Cambridge (p. 395).

MANY OF THE PAPERS read at the Cambridge meeting of the British Association are instructive and suggestive to pharmacists. We have given abstracts of the most interesting on pp. 389 to 391.

THE Canadian Senate have ordered a return of the names of proprietary articles "purporting to remove diseases caused by indulgence, habit, or accident, and to restore former strength" (p. 388).

SIR WILLIAM RAMSAY has made another interesting announcement as to the progress of his radium investigation. He finds that the vessels in which the emanation is stored become radio-active, but that the radio-activity is removed by washing with water (pp. 394 and 389).

THE TRANSVAAL CHEMISTS have petitioned Lord Milner against the imposition of a duty on alcoholic medicinal preparations. We print the petition in full on page 414. Natal chemists are perturbed about the same subject, and at a meeting at Durban the proposals were condemned (p. 413).

IN drugs and chemicals business remains much as previously reported, a feature being the advancing tendency of most American indigenous roots and barks, such as hydrastis, sassafras, serpentary, slippery elm, black haw, &c. Quinine in second hands is firmer, and so is Madras turmeric and lavender flowers. Tartaric acid is pressed for sale, and podophyllum-root is lower. Opium is dearer in Smyrna (p. 409).

Corner for Students.

CONDUCTED BY LEONARD DOBBIN, PH.D.

Salts, and the Ionisation Theory.

ANALOGY BETWEEN THE GASEOUS AND DISSOLVED STATES.

SUBSTANCES dissolved in liquids are now looked upon as being in a condition which is in many respects comparable with the gaseous state; the particles of a solute move about in the solution in much the same way as the particles of a gas do in space, except that in the former case the motion is greatly interfered with by the presence of the solvent. There is a close analogy between the dissolution of a solid in a quantity of solvent and the vaporisation of a liquid into a limited space. Each process goes on until equilibrium is reached at a definite concentration—the liquid is then saturated with the solute, and the space is saturated with vapour—and in each case this concentration is constant for any given temperature. Gas or vapour in a closed vessel exerts a definite pressure, and this *gaseous pressure* depends on the concentration and the temperature. There is an analogous phenomenon, called *osmotic pressure*, due to the solute in a solution, though here the effect is not so obvious as in the preceding case. The “pressure of a gas” may be taken as that pressure which is necessary to prevent the gas expanding to fill a larger space. Similarly the (osmotic) pressure of a solute would be that pressure which must be exerted *upon the solute* to prevent it expanding to occupy a larger volume of solution. The volume of the solution, under constant conditions of temperature, etc., can only increase by taking up more solvent, and the effects of osmotic pressure are directly observable only under conditions which allow of this taking place. Thus, if two dishes, one containing pure water and the other an aqueous solution, are placed under a bell-jar, and left for some time, the volume of the solution increases while the volume of the pure water correspondingly diminishes, the water passing to the solution, through the intervening space, in the form of vapour. If a quantity of solution is placed in a bladder (only partially filling it), and this, after the air has been expelled, is tied up and suspended in a quantity of pure water, the solution will increase in volume, owing to water passing through from the outside, so that the bladder will ultimately become distended and subject to considerable internal pressure.

There are serious practical difficulties which render it exceedingly troublesome to obtain even moderately accurate direct measurements of the osmotic pressure exerted by a solute. There are, however, certain effects, resulting from osmotic pressure, which lend themselves to exact determinations, and the measurement of such effects is now a matter of considerable importance. An idea of how it is that some of these effects are related to the osmotic pressure may be obtained from the following considerations. The pressure exerted by gas or vapour resists any change tending to reduce the volume occupied; correspondingly, the osmotic pressure of a solute resists any change tending to reduce the volume of the solution. Reduction of the volume of a solution involves the removal of the solvent; this is generally effected by evaporation, but the same results may usually be achieved by freezing it out from the solution, since it is only in exceptional cases that the frozen part contains solute. The osmotic pressure of a solute must therefore offer a certain amount of resistance to the processes of evaporation and freezing; this is found to be actually the case, as is evidenced by the fact that the boiling-points of solutions are higher, and the freezing-points lower, than the corresponding points for the pure solvent. These facts may be expressed in another way, by saying that the presence of a solute lowers both the vapour-pressure and the freezing-point of a solvent. For a given solvent, the extent to which the boiling-point or the freezing-point is altered is proportional to the osmotic pressure, and this again is proportional to the *molecular concentration** of the solute, just as gaseous pressure is proportional to the mole-

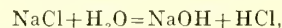
cular concentration of the gaseous substance (temperature in both cases being constant). It is thus possible to extend to solutes Avogadro's hypothesis concerning gases, remembering, however, that in the former case “pressure” means osmotic pressure.

When the pressure, temperature, and mass-concentration of a gas are known, the molecular weight can be obtained by a simple calculation; similarly, the molecular weight of a solute could be calculated if its (osmotic) pressure, temperature, and mass-concentration were known. As has already been indicated, the direct measurement of the osmotic pressure cannot at present be carried out simply and accurately, but the two effects which, as already mentioned, are proportional to it—elevation of boiling-point, and depression of freezing-point—are capable of accurate measurement without much difficulty. By means of such determinations, therefore, it is possible to ascertain the relative molecular weights of dissolved substances.

MOLECULAR WEIGHTS OF DISSOLVED SALTS.

When the methods of determining molecular weights of solutes are applied in the case of salts (including acids and alkalis) in aqueous solution, results are obtained which do not fit in with other known facts, unless it is assumed that these substances undergo some kind of decomposition in the process of solution. Thus, the smallest possible molecular weight of sodium chloride, as expressed in the formula NaCl, is 58.5; as deduced from the freezing-point of aqueous solutions, it is much lower, being little more than half that value in very dilute solutions, but increasing with increasing concentration. Similar results are observed with other salts, the numbers obtained in each case being always less than would be expected from the accepted formula of the salt. In many cases the discrepancies are slight, but in others they are very considerable. When the discrepancy is large, it is found that the aqueous solution of the salt concerned is a good conductor of electricity; but, in those cases where the determination of the molecular weight gives a result closely agreeing with the expected value, the aqueous solution is, as a rule, a very poor conductor.

These discrepancies correspond closely with the apparent irregularities observed in certain cases, when the method of determining molecular weights by means of vapour-densities is employed, and such exceptional cases were the cause of much dubiety until they received a simple and satisfactory explanation. For example, it was found that the density of the vapour obtained by heating ammonium chloride was little more than half that which was expected, and which was necessary to justify the formula NH_4Cl . As soon as it was shown, however, that ammonium chloride undergoes dissociation into ammonia and hydrochloric acid when it is heated, all the difficulty vanished; the vapour-density which was determined was not that of ammonium chloride itself, but that of a mixture of equal volumes of ammonia and hydrochloric acid together with a small proportion of ammonium chloride. At first sight, a similar explanation of the discrepancies observed in the case of dissolved salts, such as sodium chloride, seems hardly possible, for in that case a simple decomposition would result in the production of *free atoms* of sodium and chlorine; the occurrence of a double decomposition between the salt and water, such as that represented by the equation



would certainly result in doubling the number of molecules of solute, but the assumption of any such double decomposition is futile as an explanation of the abnormality of sodium chloride, since sodium hydroxide and hydrochloric acid themselves exhibit the same abnormality in solution that sodium chloride does.

THE IONISATION HYPOTHESIS.

The theory which gives the most satisfactory explanation of the peculiarities of salts in solution is based upon concentration is obtained by dividing the concentration by the molecular weight.

$$\text{Concentration} = \frac{\text{mass}}{\text{volume}}$$

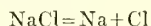
$$\text{Molecular concentration} = \frac{\text{concentration}}{\text{molecular weight}}$$

* The *concentration* of a substance is the weight, or rather the mass, of that substance contained in unit volume; to avoid ambiguity this is later on referred to as *mass-concentration*. The molecular concentration of a substance would be the number of molecules of that substance contained in unit volume; the absolute number cannot, of course, be determined, but an expression for the *relative* molecular

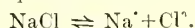
what is practically a double-decomposition view, in which it is assumed, however, that the salt interacts, not with a chemical substance, but with electricity. According to this hypothesis, when a salt dissolves in water some of its molecules are resolved, there and then, into ions, consisting not of the free radicals themselves, but of these *united each with a definite quantity of electricity*, the charge being positive in the case of the cation and negative in the case of the anion. The charges thus assumed to form ions, positive or negative, as the case may be, are all exactly equal; but a radical in forming an *ion* may assume one, two, or more charges, according to its chemical character, just as it may unite with one, two, or more atoms of, say, a halogen, or of a univalent metal, to form a *molecule* of a salt. In this connection it is therefore sometimes convenient to speak of the charges as "atoms" of positive or of negative electricity, resulting from the splitting-up of "molecules" composed of both, and therefore electrically neutral.

The process of the formation of ions which is thus supposed to take place when a salt dissolves in water is frequently called "electrolytic dissociation," but there are certain objections to this expression. *Ionisation* is a convenient name, and will be adopted here.

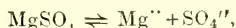
If, as is frequently the case, it is desirable to represent the ionisation of a salt by means of an equation, some special method of indicating the electrical charges is required. Such an equation as



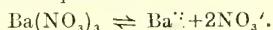
does not represent the ionisation of sodium chloride, because the symbols on the right side stand for free atoms of sodium and chlorine, and these do not exist in the solution. One method of representing the ions consists in indicating the charges by means of small + or - signs (one for each charge), placed over the formulae of the radicals. Another method, which is more convenient typographically, is the employment of a dot (·) to represent a positive charge, and a (') to represent a negative one, these signs being placed immediately after the formulae of the radicals, as shown in the equations below. The ionisation process is reversible, and there is a balance in the solution between the ions and the non-ionised molecules of salt; it is sometimes important that this also should find expression in the equation. Omitting, as it is not really required, any symbol for the "molecule of neutral electricity," the equilibrium in an aqueous solution of common salt may therefore be represented by the equation—



The corresponding equation in the case of magnesium sulphate would be—



because in this case the radicals are both bivalent, and assume double charges when they form ions. In the case of barium nitrate the equation would be—



English News.

Local newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Brevities.

On August 17 a party of twenty assistants engaged in the Burton branches of Boots (Limited) inspected the breweries of Messrs. Bass & Co. at Burton.

James Craig (16), a chemist's apprentice at Douglas, Isle of Man, was drowned on August 14 while bathing in a dam at Douglas. Two companions tried unsuccessfully to save him.

Henri Prideau, photographer, Shepherd's Bush, was remanded at the Guildhall Police-court on August 24 on a charge of stealing lenses and cameras to the value of about 100*l.* from his late employer, Mr. R. Green, optician, 81 Aldersgate Street, E.C.

Any claims against the estate of the late Mr. Alfred Dyson, chemist, formerly of 96 High Street, Grays, Essex, must be sent to the administratrix, Mrs. S. A. Dyson, at the offices of her solicitors, Messrs. T. A. Capron & Co., Grays, on or before September 20.

At the Clerkenwell Sessions on August 24, Mary Paterson Patrick, domestic servant, pleaded guilty to stealing property to the value of 350*l.* from her employer, Mr. Frank Clarke, wholesale druggist, 40 Belsize Avenue, Hampstead, and was sentenced to six months' imprisonment in the second division.

The Oddfellows of Wimborne, in appreciation of the services of Mr. W. J. Dunn (who is dispenser to Drs. G. H. Batterbury and E. Kaye Le Fleming, the medical officers of the local Lodge), have presented him with a solid silver tea-service of the Queen Anne pattern, accompanied by an illuminated address.

In the City of London Court on August 23, a boarding-house proprietor at Queen's Gate, W., obtained judgment for 5*l.* 9*s.* 5*d.*, for board and lodging due, against Mr. Eugene Bauer, indigo merchant, Mincing Lane, E.C. The Judge, however, awarded defendant 1*l.* 1*s.* as damages for the inconvenience he had been put to by the plaintiff.

The Chemists' Assistants' Association have awarded their "Essay" Prize to Mr. F. W. Gamble, pharmaceutical chemist, for his paper on "Sera and Immunity." The prize consists of the Association silver medal, together with a cheque for 5*l.* and a copy of Remington's "Practice of Pharmacy," given by Messrs. Burroughs Wellcome & Co.

Human and Bovine Tuberculosis.

Dr. G. A. Heron, 57 Harley Street, W., communicates to the "Times" part of a letter he has received from Professor Koch in reference to the controversial question as to the non-identity of human and bovine tuberculosis.

"... It will interest you to hear that the experiments which were made at my suggestion in the Imperial Institute of Public Health concerning human and bovine tuberculosis are practically complete, and quite bear out my views. These experiments were carried out on such a number of animals, and with so much care, that they are, I firmly believe, incontrovertible.

"Besides this, these experiments were made during my absence (in Africa), and, therefore, were not influenced by me. They prove that bovine and human tuberculosis are different from one another. Cattle cannot be infected with human tuberculosis. In very rare instances can man be infected with bovine tuberculosis.

"This work will be published in detail in a few months."

Cheltenham Chemists' Conviviality.

More than twenty members and friends of the Cheltenham Chemists' Association had a most enjoyable day's recreation on August 18, assembling at Tewkesbury. A steam-launch conveyed the party for a trip up the Severn to Worcester. Over an hour was spent at Worcester looking round the Cathedral and other interesting buildings; afterwards the party was photographed, and the return journey to Tewkesbury ended a very pleasant day. The company present included Mr. and Mrs. L. L. Stroud (Tewkesbury), who acted as host and hostess, and to whom a most hearty vote of thanks proposed by the President of the Association, Mr. William Barron, was accorded. Mr. Freshfield Reynolds (Gloucester), the President and Miss Reynolds, Mr. and Mrs. A. Lee Hall, Mr. and Mrs. Hampton, Mr., Mrs., and Miss Barlow, Mr. and Mrs. Enoch, Messrs. H. Hargreaves, F. Horniblow, C. James, W. S. Church, W. J. Wilson, G. Jones, and J. A. Thomas (Hon. Secretary).

Birmingham Notes.

A belated annual report of the local Association has been distributed amongst members. It is rather curious reading in view of the fact that the members have but recently had a very successful excursion to Dovedale to read of a similar excursion to Hortelfleet.

Trade amongst retailers is very slack, and employes are being dismissed. This naturally affects the wholesale trade, and it is stated that a local wholesale firm have reluctantly been compelled to discharge nearly a score of assistants owing to the depression.

Aston has decided to at once call a meeting of shop-keepers for the purpose of putting in force the provisions of the new Shop-hours Act, and it is probable that the

pharmacists of the district will co-operate. The suggested days and times are:—Mondays and Tuesdays, 7 P.M.; Wednesdays, 8 P.M.; Fridays, 9 P.M., and Saturdays, 11 P.M.

An unfortunate tram turnover at Bordesley brought hurried orders to the local brotherhood for appliances for first-aid operations on August 23. Many persons were severely injured, but happily none were killed. If these accidents continue a surgical outfit will soon be necessary for each tram-car, as accidents of the sort have been unusually frequent of late.

The "dearth of locum tenens" crops up annually, but from trustworthy sources one learns that there has seldom been such a dearth of good holiday assistants as at the present time. Several reasons are assigned for this, the most feasible being that it is the quiet season and the volume of trade done in the retail at this season of the year is much below the average of many years.

The presence of starch in cream of tartar mentioned in an analyst's report in last week's *C. & D.* reminds one of another curious adulterant—namely, borax. This was discovered in a local student's laboratory in a sample of cream of tartar, and a communication to the vendor elicited the fact that borax had been ground in a mill which had previously done duty for cream of tartar.

The idea of employing outside analysts as food-and-drug inspectors, as stated in the recent case against Needhams (Limited), is not a new one in Birmingham, for it is common knowledge that many pharmacists have practised this useful means of keeping themselves up to standard for many years, and have therefore always been forewarned and forearmed.

Flies have been so numerous in Birmingham this summer, and in spite of fly-papers, fly-reels, and other fly-morgues, have held their own so strongly that the "Mail" has interviewed a leading medical practitioner on the subject. The doctor gave such a terrifying account of the danger of the fly that quite a run on destructives has replenished the chemist and druggist's coffers.

Mr. Marshall Freeman's letter to the "Post" regarding milk-prosecutions (see *C. & D.*, August 20, page 352) has brought retorts from Mr. A. E. Johnson, assistant to Mr. E. W. T. Jones, public analyst for Staffordshire, and from the city analyst, Mr. J. F. Liverseege, pharmaceutical chemist. Mr. Liverseege objects to the statement that his certificates are "unfair" and "magnify the enormity (?) of the offence." He states in the first place that Mr. Freeman misquoted the actual wording of the milk regulations of the Board of Agriculture. The particular case named by Mr. Freeman apparently referred to a sample examined by Mr. Liverseege, and the analyst points out that his certificates for adulterated milk have always contained the figures for fat as well as for solids not fat. Mr. Liverseege says he always tries to make his certificates a fair statement of the analysis, and he believes his certificates are fairer than those of analysts who use the term "added water."

Disinfecting the Metropolis.

Information as to the disinfectants used by some of the Metropolitan Borough Councils is given in the annual reports just circulated of various medical officers of health.

In Battersea the disinfectant used in most cases was formic aldehyde, either volatilised in an Alford lamp, or, more usually, applied in solution as "formalin" by means of a spray. In verminous rooms sulphur dioxide was used. After small-pox cases the rooms were first disinfected by formic aldehyde and then the walls were stripped of paper and washed down before and after stripping with a solution of formalin. The quantities of disinfectants supplied to the Hackney Borough Council during the twelve months were: Sanitas powder, 15 tons; carbolic powder, 8 tons; carbolic acid, 200 gallons; kuno, fine, blocks, 50 cwt.; kuno, fine, liquid, 60 gallons; kreosol, 10 gallons; sulphur, 1 ton. The disinfectants issued to applicants by the Public Health Department were 6,986 bags of sanitas powder of about 1 lb. weight each, and 719 bottles of carbolic acid, the quantity in each bottle being 4 oz. At Wandsworth the new disinfecting station at Tooting has a formalin chamber, so that articles can be fumigated there which it would be impossible to disinfect in any other way. Another chamber of the same pattern will be erected at an early date.

Analysts' Reports.

Mr. M. A. Adams, the Kent County Analyst, reports that last quarter fifty-three samples of drugs were analysed, and five, or 9.43 per cent., were adulterated—viz. cream of tartar, glycerin, liniment of camphor, and tincture of iodine.

During the twelve months the Hampstead Public Analyst examined the following, and certified all to be genuine: Camphorated oil, carbolic acid, carbolic powder, and sarsaparilla, 1 sample each; gall ointment and glycerin, 2 each.

In his annual report the Public Analyst of Battersea states that of eleven samples of camphorated oil examined two were not genuine and two were inferior. Of six samples of Bland's pills, one was adulterated. The following were genuine: Cream of tartar, 3; lime water, liniment of iodine, milk of sulphur, olive oil, and tincture of iodine, 2 samples each.

The Public Analyst of Southwark has just reported that during the twelve months he examined the following and found them genuine and in accordance with the requirements of the B.P.: Cod-liver oil, 2; olive oil, 11; camphorated oil, 6; linseed oil, 5; Gregory's powder, 4; tartaric acid, 3; citric acid, 2; and oil of lemon, oil of almond, and glycerin, 1 sample each.

The annual report of the Public Analyst of Lewisham circulated on August 20 stated that of the eight samples of lime-water examined during the year six were not in accordance with the B.P. One contained 171 per cent. of lime in excess and another 34 per cent. deficiency. Of the six samples of tincture of bark submitted, three were deficient in alkaloids. The following were found to be genuine: Olive oil, 4; tincture of quinine, 2; ammoniated tincture of quinine, 2; camphorated oil, 2; cod-liver oil, 2; tincture of iodine, 1; tincture of guaiacum, 1; tincture of iron, 1; sal volatile, 1; spirit of sweet nitre, 1; and paregoric, 1.

According to the yearly report of the Public Analyst of Wandsworth the following cases of drug adulteration were discovered during the twelve months: Lime-water, 75 per cent. deficient in lime; lime-water, 20 per cent. deficient in lime; pilule ferri, deficient in ferrous carbonate to the extent of 66 per cent. Twenty-seven samples in all were examined as follows: Pilule ferri, lime-water, 5 each; linseed meal, 4; milk of sulphur, tincture of ferric chloride, 3 each; Gregory's powder, ammoniated tincture of quinine, 2 each; camphorated oil, sal volatile, liquorice powder, 1 each. In the preceding year only two samples of drugs were submitted, and both proved genuine.

In his annual report just issued, Dr. A. W. Blyth, Medical Officer of Health and Public Analyst to the Borough Council of Marylebone, states that in eleven sample of common salt examined by him three contained arsenic in the feeble proportion of .0024 grain per lb. The interest of finding arsenic in salt lies, he says, in the fact that it is used as a preservative for various meats and enters so largely into most articles of diet. The drugs examined included bicarbonate of soda, 1 sample; citrate of magnesia, 2; tincture of rhubarb, 1; sweet spirit of nitre, 1; camphorated oil, 1; quinine, 1; ecugh mixture, 1; olive oil, 4; and cod-liver oil, 1. All were genuine and in accordance with the requirements of the B.P.

A Cruelty-to-Animals Case.

Mr. Henry A. C. Hobbes, chemist, 358 High Street, Rochester, was charged at the Rochester City Bench on August 23 with cruelty to a cat and a duck on Bank Holiday and other dates. The Royal Society for the Prevention of Cruelty to Animals prosecuted, and Mr. A. Booth Hearn defended. The evidence was that defendant left his premises at Bank-holiday time closed up, and was away four days during the very hot weather. He left a cat, dog, and a duck, some rabbits, and fowls in the cellar and yard, and when the premises were forced the cat was found dead, having been doubtless partly eaten by the dog, and the other animals were found in a very bad condition. The cruelty alleged was the leaving the animals unprovided for. Defendant, in his defence, said he had previously seen Dr. Bond at the Throat Hospital about his throat. The doctor said he was suffering from laryngitis. When he went away on Bank Holiday he left, as he thought, sufficient food for

the animals for two or three days. He went to Eastbourne, then to the Brighton Hospital next day and saw the house surgeon, was operated on at once, and then advised to take perfect rest and quiet. He went to London on the day following to the University College Hospital, and the surgeon examined his throat and gave him medicine for a week. On going home he found the place had been forced open and the animals taken away. The place was left to the mercy of anyone, and everything was turned upside down. Fortunately a check-till containing 40*l.* or 50*l.* was left intact. The Bench fined defendant 1*l.* and costs in each case—total, 4*l.* 14*s.* 6*d.*

Sheffield Notes.

Those of the Conference visitors who were "gone" on Haddon Hall will be interested in a new book on that interesting fabric by Mr. F. H. Cheetham. The book, published at 2*s.* 6*d.*, is well illustrated with photographs and plans, and has a bibliography which students of archæology will find useful.

The new shop-front at Mr. J. F. Eardley's Glessop Road premises, as to which reference was made last week (p. 358), is a fine example of a high-class corner pharmacy. The illustration gives a good idea of the present appearance



of the pharmacy. The external work was carried out by a local firm, but Messrs. Evans, Sons, Lescher & Webb (Limited), Liverpool, are responsible for the interior fittings. Mr. Eardley's Rammoor branch shop was figured in the *C. & D.* of July 9.

Fire.

On August 20 a fire broke out on the premises of Messrs. Booth and Openshaw, chemists and druggists, Blackburn, but owing to the promptitude and smartness of two constables, who removed the inflammable stock, such as turpentine and oils, pending the arrival of the fire-brigade, little damage was done. The origin of the fire is attributed to spontaneous combustion.

The Week's Poisonings.

Only four poisonings appear to have taken place during the past week, one being a misadventure. At Sheffield, a grinder named Turner died from the effects of laudanum-poisoning. His body was found in a plantation, near to the carcass of a calf, and four empty laudanum bottles were near. It was supposed that the man had first experimented on the calf, but a veterinary surgeon made a *post-mortem* and found that the animal died a natural death. Harriet Taylor, of Bethnal Green, poisoned herself with a

solution of bichromate of potassium. A Portslade servant, named Edith Nicholls, 26, drank some liquid ammonia and died. At Cambridge the five-year-old son of Ellen Bagstaff secured a bottle of spirit of salt, and drank a fatal quantity. The foreman of the jury at the inquest remarked on the fact that hydrochloric acid was not a scheduled poison and said he had frequently seen children carrying it from shops. At an inquest at Burton-on-Trent on August 22 on the body of Dorothy Muriel Over (ten months), it was shown that the deceased had suffered from whooping-cough, but had not been medically attended until shortly before her death, and that the mother had administered cough-mixture which she had purchased at a chemist's shop, giving the child four drops every hour. Dr. Sparrow, who was called in just before death, said it was ridiculous to administer cough-mixture to the child once an hour, and added that such treatment might have irritated the stomach and brought on the diarrhoea which, with the convulsions, produced death. The jury returned a verdict in accordance with the medical evidence, and the Coroner, on their suggestion, warned the mother against the indiscriminate use of medicines purchased from a chemist when a doctor had not been consulted. Percy Green, 13, of Oakworth, complained of severe pain in the eyes. Afterwards he foamed at the mouth and died half an hour later. Dr. Thompson, who was subsequently called, expressed the opinion that death was due to nicotine-poisoning, the result of smoking cigarettes.

Irish News.

Local newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Personal.

Mr. G. D. Peggs, M.P.S.I., has been unanimously elected vice-chairman of the Dalkey Urban Council.

An Irish Exhibition.

It has been decided to hold at Cork, in October next, an exhibition of home-manufactured articles of commerce. The exhibition will be under the auspices of the Cork Industrial Development Association.

Laudanum-poisoning.

On August 23 Private Thomas Ellis, Army Hospital Corps, who acted as clerk and dispenser at the New Barracks, Limerick, was discovered dead in bed from the effects of a dose of laudanum. By his bedside was found an empty 4-oz. bottle which had contained laudanum.

Theft Charge.

In the Dublin Police Court last week four schoolboys were charged with having stolen two tablets of toilet-soap, value 6*d.* each, and two bottles of perfume, value 1*s.* each, from the counter of the shop of Messrs. Hayes, Conygham, & Robinson (Limited), 12 Grafton Street, Dublin. They were remanded.

No Recoupment.

The Local Government Board has declined to recoup the Navan Board of Guardians for medicines for which no samples were forwarded for analysis, to the extent of 3*l.* 3*s.* 5*d.* The Guardians passed a resolution requesting Dr. Phillips, the medical officer concerned, whom they held responsible, to lodge the amount to the credit of the Board.

Payment of Analysts.

The Westmeath County Council pay Sir Charles Cameron 10*l.* a year as analyst in connection with the Fertilisers Act. Sir Charles has since called attention to the fact that he analysed 27 samples last year that were not contemplated at the time of his appointment, and he has applied for 5*l.* 8*s.* remuneration for this work at the rate of 4*s.* per sample. The matter was referred to the solicitor.

An Entomological Capture.

Mr. Welsh, jun., the Medical Hall, Lisburn, has just captured and mounted a specimen of the pine-saw fly, a native of California. The insect, which is wasp-like in shape, measures about 1½ inch in length; the head and thorax are black, and the body is broadly banded with a dullish scarlet and bright yellow. The saw from which

the fly derives its name leaves the body at the waist, and runs backwards for about 1 inch.

Surcharged.

At the last meeting of the Rathdown Board of Guardians it was announced that Messrs. McQuirk, O'Teanel, and Hackett (Guardians) had been surcharged by the Local Government Board auditor with the amount of 4*l.* 6*s.*, because of 6*d.* per gal. above wholesale price having been paid in respect of Jeyes' fluid. The Guardians decided to appeal to the Local Government Board with respect to this and other surcharges, and it is believed that the amounts will be remitted.

A Long Way to Walk.

Arising out of a resolution of the South Dublin Union Guardians to pay 52*l.* a year to their medicine compounder, Mr. McKenna, in lieu of house rent, the Local Government Board have written to the Guardians objecting to the present arrangement under which dispensary patients have to go three miles to Mr. McKenna's pharmacy, in Aungier Street, to get medicines. Surprise is expressed by the Local Government Board at the non-use of the dispensary premises at Donnybrook. A committee of Guardians has been appointed to deal with the question of housing the chemist.

The Guardians did not Understand.

At the last meeting of the Newtownard Guardians the Local Government Board wrote stating that the drugs supplied to the Greyabbey dispensary were not satisfactory. A letter was read from the contractors, Messrs. John Clarke & Co., stating that they were surprised at the unfavourable report, as they were confident that the drug complained of was of correct strength. The contractors' letter was ordered to be sent to the analyst. The Local Government Board also wrote complaining of the drugs sent to the Donaghadee dispensary. Mr. McConkey: If this contractor continues to bother us like this we should strike him off the list. Mr. Wright: They should send us the commercial names of the drugs, not the chemical ones. Few of us understand what they are writing about. The letter is to be forwarded to the contractor.

Difficulties with Empties.

Two Boards of Guardians in Ireland are in trouble about the return of empties this week. Mr. White, of Sligo, has written to the Tullamore Guardians stating that the empties must either be returned or paid for. The total claim is for over 11*l.* It was stated that empties were sent to Mr. White on the previous Friday and that Mr. White had given no credit for empties returned since May. It was decided that the balance be sent on as soon as possible.

A similar letter was sent by Mr. White to the Stokestown Board of Guardians. Dr. Duffy stated that some time ago he sent on a quantity of empties through Mr. Lee, of Longford, but on inquiry he was told by the latter that he would stick to the empties till Mr. White paid him some money. Mr. White then sent the money to the railway company instead of to Mr. Lee. The Clerk said Mr. White was bound by his contract to take away the empties.

Scotch News.

Local newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

More Shops.

St. Cuthbert's Co-operative Society, Edinburgh, has been so successful with the drug shops it has opened that a few more are now being proceeded with.

A Sequestration.

The "Edinburgh Gazette" of August 23 contains the intimation that the estates of John Taylor Leighton, manufacturing chemist, recently residing at 25 Cherry Gardens, Edinburgh, and carrying on business at 20 Picardy Place, were sequestered on August 19.

Cullen as a Summer-resort.

With the object of booming Cullen, a pretty little town on the Banffshire coast, Mr. George Seivwright, chemist and druggist, of The Square, Cullen, is issuing a well-produced weekly journal, "The Cullen Record." Mr. Seivwright has done much to popularise this salubrious

summer-resort, and anyone in search of a bracing, restful holiday, with bathing, boating, golfing, and other health-giving amusements, would do well to write for a copy of the "Cullen Record."

West-coast Notes.

Mr. Bannatyne, chemist, has disposed of his business at Millport, and is going to a milder climate for the sake of his health.

A branch opened by Cheap and Good (Limited), in Greenock, has now been converted into a general store under a new name.

Trading-stamps have been taken up by one chemist in Greenock. They appear to bring a certain class of customers, who like to think they are getting something for nothing.

Mr. William Ross, chemist, is opening a first-class pharmacy in Union Street, Greenock. Mr. Ross was for some time assistant with Mr. Anderson Russell, of Grey Place, Greenock.

At Kildonan, near Campbeltown, on August 18, a young woman named McDonald died as the result of phosphorus poisoning. About a week before, the woman drank a quantity of butter-milk, into which some children had accidentally dropped a jar of phosphorus paste, used for rat-poison.

Dundee Notes.

Mr. Henry Geake, chemist and druggist, has now opened his new shop at 6 Whitehall Street. Messrs. Evans Sons Lescher & Webb (Limited) supplied the fittings, etc.

Mr. George Petrie, F.S.A., a well-known antiquarian bookseller of literary and refined tastes, died last week. After leaving school he spent a few years in the Wellgate Laboratory.

A letter with the "Rothesay" postmark addressed to "The Chemist, Reform Street (right-hand side from the High Street) Dundee" found Messrs. Cummings Brothers on August 16 without trouble or delay.

Free sample doses of Veno's seaweed tonic were given away on August 20 at the establishment of Mr. James Anderson, "The Dundee Drug Stores," in the High Street. Considerable numbers of people availed themselves of the free medicine.

A confectioner in Ann Street, who attempted to commit suicide by hanging, was cut down by two gentlemen (called in by the frightened wife), one of whom was a neighbouring chemist. Artificial respiration was applied for fully twenty minutes, but when consciousness returned the would-be suicide became unmanageable and had to be removed to the asylum.

Mr. Gibson's Funeral.

There were quite 150 people at the funeral of the late Mr. Adam Gibson, which took place at Warriston Cemetery, Edinburgh, on Tuesday last, the drug trade being well represented. Among those present were Messrs. T. Stephenson, J. L. Ewing, Peter Boa, W. Duncan, J. R. Hill, W. B. Cowie, and John Nesbit (Edinburgh); Mr. J. H. Thomson (Lochee); Mr. W. B. Bruce (Dunblane); Mr. R. Lindsay (Peebles), and Mr. A. Tweedie (Bo'ness). The fishers and anglers of Edinburgh were in good number, Mr. Gibson having been President of the Trout Anglers' Association. There were many beautiful wreaths.

Bowling in East Stirlingshire.

The following are the results of the ties in the third round of the competition promoted by the Eastern District of Stirlingshire Medical and Pharmaceutical Bowling Association:

Mr. James MacNiven, Grahamston, beat Dr. Gardner, Grahamston.

Dr. McCracken, Grahamston, *v.* Dr. Smith, Falkirk (to play).

Mr. J. J. Forbes, Denny, beat Mr. Andrew Geddes, Camelon.

Mr. J. W. Bennie, Polmont, *v.* Dr. Watt, Grahamston (to play).

The draw for the semi-final, which was made on August 24, is as follows:

Mr. MacNiven *v.* Mr. J. J. Forbes.

Mr. Bennie or Dr. Watt *v.* Dr. Smith or Dr. McCracken.

The draw in the second round of the Consolation competition also took place on August 24.

French News.

(From our Paris Correspondent.)

THE OYSTER VINDICATED.—Professor Giard, of the Faculty of Sciences, in a voluminous report sent to the Minister of Marine, has just whitewashed the oyster. He says, first of all, that none of the maladies of the bivalve are catching for man. Finally, the professor asserts that it is a question whether there are any authentic cases on record of typhoid traced to oysters, and that at all events they are so rare as to be negligible.

THE LEGEND OF THE "POISONED GLOVES" of mediæval France and Italy, capable of killing the person who wore them, has been disputed by French scientific writers. We are informed that René, the perfumer, invented them, and M. Chapius, in his "Toxicology," suggests that hydrocyanic acid might have been the base used. But MM. Cabanès and Nass come to the conclusion that the tale is not worthy of credence, and is a mere legend.

RACINE AND BRINVILLIERS.—Racine, the famous French poet, was accused by La Voisin of having poisoned Mme. Du Parc. Such crimes were common in his day, but such accusations were still commoner. Professor Bernardin, a Racine student of mark, finds him "not guilty," and MM. Cabanès and Naas, who have made a special study of these ancient medical matters, give the same verdict. It is true these latter authors also find that the Marchioness of Brinvilliers was not morally responsible, and that "she ought to have had doctors rather than judges."

THE "STAG" PHARMACY (*Pharmacie du Cerf*) at Strasbourg was of course a French house before the war of 1870, and the "treasure-trove" unearthed during the recent repairs consisted largely of Louis XV. and Louis XVI. coins. The latest date on any piece was 1811, which leads to a supposition that the treasure was interred during the Napoleonic wars. This is the most ancient pharmacy of the Alsatian capital, being mentioned in a document as having belonged to the apothecary Henri Philippi in 1268. The salamanders and dragons carved in the vaulting had been built and plastered over, but are now being uncovered by the present proprietor.

BRIEF MENTION.—Amongst the new members recently elected on the Municipal Council of Paris are M. Houdé, pharmacist, and three medical men: Drs. P. Brousse, Navarre, and Poirier de Narçay. The list of leading business men recently nominated as members of the French Council of Export Commerce includes the names of M. Horn, the manager of the Leipzig branch of Lorilleux's (ink, &c., manufacturers), and M. Jablin-Gonnet, consulting chemist at Paris. The Committee of the Pharmacy Section of the International Exhibition of Hygiene is presided over by M. Leprince, M. Prunier (acting as secretary), and MM. Ch. Buchet, V. Fumouze, and L. Landrin as Vice-Presidents.

THE PHARMACIST'S ASSISTANT.—The great Congress of shop assistants held at Lyons last week has drawn popular attention to the long hours of those engaged in retail trades in France, and the leading dealers are joining in the crusade for a weekly day of rest for this overworked class. The Paris Association of Assistant Pharmacists are also preparing for their congress next month by a press campaign, articles having appeared in the "Action" and other dailies drawing attention to their lot. Their ambitions are summed up under four heads—(1) Legal recognition of their calling, (2) Legislation limiting hours of work, (3) "Prud'homme" or arbitration tribunals for the settlement of disputes between pharmacist and employé, and (4) Weekly rest.

THE SYNDICAL CHAMBER and Provident Society of Pharmacists of Paris and the Seine Department—to give it its full title—has elected its administrative Council for 1904-5 as follows: President, M. Renard; Vice-President, M. H. Martin; General Secretary, M. Beytout; Assistant Secretary, M. Dufau. M. Crinon and M. Labelonye continue their respective functions as Archivist and Treasurer, which they have fulfilled for so many years with such entire satis-

faction to their colleagues. The Disciplinary Committee—an important body which tenderly and carefully sees that the black sheep do not stray too far from the fold of pharmaceutical legality—is composed as usual of the President, Vice-President, General Secretary, and nine of the most devoted and hardest working members of the Chamber, these latter being MM. Bocquillon, Cappez, Dumorithiers, Gigon, Jolivet, Lhopitalier, Rousseau, Streebel, and Vaudin.

POISON AT THE PASTRY-COOK'S.—As several poisoning accidents have recently happened through the consumption of the cream-cakes (*gâteaux à la crème*) so popular in France, a reporter of the "Journal" has interviewed the Director of the Municipal Laboratory on this subject. Stale eggs are, explains M. Girard, one cause of these fatalities on account of the yolk decomposing so rapidly on exposure to the air that the egg may in a few hours develop deadly ptomaine. Another specialist points out that pastry-cooks usually add a little alum to the whites of the eggs before whipping them in a copper basin. Alum is an acid sulphate, and in contact with copper at a high temperature a little sulphate of copper is formed. The use of alum, it is suggested, ought to be forbidden, as salt will give the same result without presenting the same dangers.

IN LIGHTER VEIN.—A capital *feuilleton* is M. Edmond Harancourt's interview in the "Journal" last week. A pharmacist's assistant sees his employer's daughter pick up a tin box left just outside the officine. It is a bomb, presumably placed there by an anarchist. He tears it from her hands, carries it to the laboratory, and plunges it in a tub of water. All Paris rings with praises of his heroism, and the inevitable "interview" follows. The astute reporter sent by the daily paper skillfully questions the assistant. He finds out (*primo*) that he evidently knows a good deal about explosives; (*secundo*) that he is deeply in love with the young lady he saved; (*tertio*) that the bomb has not yet been analysed. He writes an article in which he points out that the "bomb" was an inoffensive engine designed and placed by M. Maxime Fausseron (the assistant) with a view of distinguishing himself and gaining the hand of his *inamorata*. The consequence is that Maxime loses both his situation and his lady love.

THE NEW MEMBER OF THE PHARMACEUTICAL SOCIETY OF Great Britain. M. Emile Perrot, Professor of *Materia Medica* at the Paris Superior School of Pharmacy, is one of the best known faces in the Parisian pharmaceutical world. He has passed all his life at the School, taking one gold and two silver medals during his student career and subsequently acting as preparator. He aided Professor Radais in designing and installing the micrography laboratories—one of the recent important additions to the School—in 1893-6, and soon after gained a travelling scholarship which permitted him to make a scientific tour through the laboratories of Germany, Austria, and Switzerland. He was a member of the head Organising Committee of Congresses at the International Exhibition of 1900 (his work in connection with the Botany Congress, &c., will be remembered); is Secretary of the Mycological Society of France, and organised the Pharmacy and *Materia Medica* section at the recent Colonial Congress.

AN OFFICIAL LABORATORY for the examination of new medicaments is the idea which M. Le Barthe, of Bordeaux, submits for the consideration of the Codex Revision Committee. He does not refer to the "patents" which are rigorously prescribed in the Bordeaux hospitals, but to new remedies of definite chemical composition like adrenaline, phenegol, cryogenine, collargol, and stypticine. If pharmacists cannot test these substances the situation has to be faced of a doctor's prescribing and a pharmacist's dispensing, a substance of which both are equally ignorant. "Nowadays, and in future," writes M. Barthe, "a pharmacist must be a universal and competent chemist; his scientific knowledge must surpass that of a University chemistry professor, and would even then be insufficient." The remedy, in the writer's opinion, is to appoint a committee and an official laboratory through which all these medicaments would pass before being handed to the pharmacist for retail.

American Notes

(From a Special Correspondent.)

IN THE RUNNING.—A prediction was made in the last American letter that Mr. C. P. Walbridge, the well-known jobber of St. Louis, would probably secure the Republican nomination for the governorship of the State of Missouri. This very thing has happened during the interim. The drug trade of the country is of course interested that one of its prominent men is in line for political preferment, and anxious that Mr. Walbridge should be elected in November.

A NEW YORK DRUGGIST recently contrived a window-display which was exceedingly simple, but which was nevertheless very "taking." He arranged in his window the several board of pharmacy certificates which he and his assistants possessed. The show attracted a good deal of attention on the part of passers-by, and must have made a definite impression regarding the professional equipment of the store.

ALLEGED POISONING.—A young society woman at Hartford, Indiana, the wife of an elderly chemist named Krauss, is under arrest, charged with the murder of her step-daughter (who stood between her and her husband's money), her own mother (by whom she received half of her father's estate), and a sweetheart, whom she jilted to marry the chemist. In each case strychnine-poisoning is said to have been the cause of death.

PENNY POST.—It is again reported, the authority of Mr. Payne, the Postmaster-General, being given, that steps are to be taken to secure a reduction of postal-rates between the United States and foreign countries, especially England. If these efforts are successful, letter postage will be reduced to 1d. per $\frac{1}{2}$ oz. The proposed reduction can only be effected by treaties with the countries interested. The matter will be discussed at the postal congress next March.

THE "KROONLAND" PASSENGER.—The newspapers recently had a good deal to say about a trip made to America on the Red Star Line steamer *Kroonland* by a woman attired in a ball dress and without baggage of any kind. She gave her name as Miss Constance Phelan, and her last address as Cheltenham, England. It is said that her father was a prominent chemist in Aberdeen, Scotland—Mr. James Hunter. The young woman showed a letter from a firm of solicitors in Lincoln's Inn Fields, London, which declared that she had an annuity of 3,000l. and that her debts would be paid for.

DRUG-TRADE DEPRESSION.—The wholesale and manufacturing druggists of America are beginning to complain of dull business. Up to very recently the drug trade did not seem to feel very materially the depression which always occurs during presidential years. The last three or four weeks, however, have witnessed a noticeable conservatism in buying. Evidently the druggists are acting very cautiously, until it is determined whether we are to have a continuation of the present administration with its high tariff policy or not. Business men in this country always fear the possibility of a democratic administration with its rearrangement of the tariff schedules. If Roosevelt is re-elected in November, business will probably pick up almost immediately.

PURITY REQUIRED.—A paper contributed by Professor E. H. S. Bailey, of the University of Kansas, to the Kansas Pharmaceutical Association, has attracted considerable attention. Professor Bailey discussed the movement for purer drugs and chemicals which had manifested itself during the last year or two, and urged its strenuous continuance. He insisted that the term "medicinally pure," when placed upon the label of a chemical, must grow to mean that the product is up to the U.S.P. standard. If this end is accomplished, "we shall not then find arsenic in glycerin, magnesium sulphate in oxalic acid, sodium bicarbonate in 'pure borax,' potassium chloride in potassium bromide, or a dangerous quantity of arsenic in sodium phosphate." Professor Bailey also declared that the term "C.P." had grown to mean "commercially pure" instead of "chemically pure," and that this condition of things must be rigidly corrected by legislation.

Colonial and Foreign News.

DEARER COTTONWOOL.—Most of the pharmacists and owners of apothecaries' stores in Warsaw have raised their prices for absorbent wool by 25 per cent., owing to the war demand.

THE ZURICH MEDICAL-TAX.—Further particulars from Zurich state that the amount fixed for the medical-tax, already referred to, is 3s. 7 $\frac{1}{2}$ d. per head of the population, with a view to raising 20,000l. Forty doctors in the town will share this money, each receiving an annual sum of 500l. In return for this salary they will be expected to give their services to "all" the inhabitants of Zurich.

FACILITIES FOR RUSSIAN PHARMACEUTICAL STUDENTS.—The administration of the chief medical inspector has deemed it practicable in the case of those who may have finished their course in the professional schools and have devoted themselves to learning pharmacy, to reduce their period of probation as students in pharmacy from three years to two. Those, however, who may have completed their fourth class in commercial education, in order to acquire the position of pharmaceutical apprentice must go through a course of Latin.

GERMAN CHEMICAL WORKS AMALGAMATE.—The Coal Tar and Mineral Oil Industry Company, Berlin, which already owns works at Niederau, Erkner, Grabow, and Pasing, and which has paid dividends of 6 per cent., 5 per cent., and 5 per cent. respectively in the past three years, now proposes to acquire three other factories. Two of these, which belong to the firm of R. Rutgers, are situated at Mochbern, near Breslau, and at Schwientochlowitz, whilst the third is located at Sosniza. One half of the shares in the latter undertaking is held by the Upper Silesian Coke and Chemical Works Company, which will transfer them to the Berlin company in exchange for shares in the contemplated new issue of shares by the latter. The capital of the Berlin company was increased in 1903 from 90,000l. to 115,000l., but the amount of the proposed augmentation on the present occasion for the acquisition of the before-mentioned three works has not been disclosed.

PROPRIETARIES IN CANADA.—In the Canadian Senate last month Dr. Sullivan moved for a statement showing the names of all liquid mixtures known as patent or proprietary medicines purporting to remove diseases caused by indulgence, habit, or accident, and to restore former strength. In making the motion he said many of these drugs contained 40 per cent., and more 30 per cent., of whisky, whilst good Hollands contained 25 per cent. and lager beer only from 2 to 5 per cent. These pernicious compounds were sold freely, often as vegetable compounds. A day or two before, an aperient pill was sent around with the compliments of a member of Parliament as a "fruitative," but all the fruit there was about it was a little lemon flavour in the coating. There was celery compound, made up largely of alcohol. Peruna had no special signification. It was almost all spirit, flavoured with prunes. If the advertisements were cut away the sale of these things would cease. He commended Sir William Mulock for his intention to keep advertisements of these things out of the mails. He introduced this because of the action of the College of Physicians of Ontario. Many a woman had been made a drunkard and the home ruined by these things. When he was a student he was cautioned as to giving tinctures, which were merely alcoholic solutions of substances water would not dissolve. Brown's chlorodyne contained morphine and would corrupt anybody. If the Senate could veto the sale of these things, they would have justified their existence. A patent required two things, utility and knowledge. These contained neither. It was a fearful thing to think of a Government granting the power to poison their own people. Hon. Mr. Scott was glad to see that medical men, not in Canada only, but in England and France, were awakening to the importance of the subject. He dwelt on the danger not to the home only, but to the future generations. They were all grateful for Dr. Sullivan's speech. Hon. Mr. Wilson said every medical man knew the dangers of these concoctions. He hoped the Government would take this matter up. The motion was carried.

The British Association.

Notes on the Proceedings.

PROFESSOR HORACE LAMB, of the Victoria University, Manchester, in addressing the Mathematics and Physics section touched on

THE WORK OF STOKES

in the development of mathematics. In the days when the chief applications of mathematics were to the problems of gravitational astronomy, the mathematician was content to take his materials at second hand; and in some respects the division of labour was, and still might be, of advantage. But in regard to the more recondite phenomena of physical optics, acoustics, and electricity, it is easy to see that the theoretical treatment must tend to degenerate into the pursuit of mere academic subtleties, unless it is constantly vivified by direct contact with reality. Stokes, at all events, with little guidance or encouragement from his immediate environment, made himself from the first practically acquainted with the subjects he treated. Generations of Cambridge students recall the enthusiasm which characterised his experimental demonstrations in optics. The practical character of the mathematical work of Stokes and his followers is shown especially in the constant effort to reduce the solution of a physical problem to a quantitative form.

RADIO-ACTIVITY.

Professor J. J. Thomson opened a discussion on the radio-activity of ordinary matter. First of all he defined a substance as radio-active if it can produce electric conductivity in a gas from which it is separated by a screen impervious to ordinary matter. One of the great difficulties in deciding whether a substance is radio-active is the almost universal prevalence of the radio-active substances themselves. The presence of radium makes investigation of the question whether ordinary matter is radio-active extremely difficult, because most minute traces of radium would overshadow the effects of very large quantities in average matter. It is remarkable that a substance discovered so recently, and one which is only to be procured at famine prices, should be so prevalent as to be in many places a nuisance. The only method he knew of settling whether the properties of ordinary matter are due to radium or not is by a careful system of measurements of the properties of the radiation given out from each material, to see whether the radiation is all of the same kind or whether it differs from one substance to another. Professor Thomson then proceeded to describe various experiments made on the subject of the radio-activity of metals and stated that the result of a very long series of experiments is that he cannot convince himself that he has found any emanation which can be attributed to metals themselves. There was generally a slight amount, but it varied in different samples of the same salt. With some salts the amount is practically nothing, with others a slight trace is noticeable.

Lord Kelvin, Lord Rayleigh, Professor Geitel, and Sir Oliver Lodge took part in the discussion, the last named remarking that on the electric theory of matter all matter ought to be radio-active, and no atom of matter should be regarded as absolutely permanent. He added that the burden of proof rested rather with those who denied that ordinary matter is radio-active.

Professor Sydney Young, President of the Chemistry section, devoted his address to a review of the state of knowledge of the

CHEMICAL PROPERTIES OF MIXTURES.

The relations of boiling-points, molecular volumes, and critical temperatures and pressures to the composition of chemical compounds were first investigated by Kopp, who for more than half a century devoted himself to researches of this kind. Kopp's conclusions have been revised and modified by later investigation. As a pioneer Kopp had very great difficulties to contend with when he began his researches; data were scanty and far from accurate; while the substances which could most easily be obtained and, it was thought, most readily be purified, were unfortunately the least likely ones to lead to normal generalisa-

tions. There could be little doubt that if Kopp had been able in the first instance to obtain a considerable number of pure substances of normal behaviour he would not have been led to the erroneous conclusions which he defended with so much vigour for so many years.

THE FLOW OF CRYSTALS.

In this section Mr. G. T. Beilby read a paper in which he directed attention to the very general character of the relations found to exist between amorphous and the crystalline states. By the use of etching in stages the successive layers of a polished or disturbed surface were disclosed, from the smooth vitreous surface through a granular layer to the undisturbed crystalline body beneath. The demonstration that the polish of a lens of rock crystal had resulted from the formation of a flowed layer of amorphous phase on its surface suggested that no crystalline substance is too hard to yield to the mechanical flowing action. The grinding of crystalline substances to powder does not simply consist in their reduction to finer and finer crystalline fragments, but involves the transformation of at any rate a part of the substance into the amorphous condition. When crystalline powders are formed into cakes by pressure the cementing material is the amorphous phase which resulted from flow.

OPTICAL ANALYSES.

Professor Brühl, of Heidelberg, read a communication on "The Formation of Salts in Solutions, especially amongst Tautomeric Compounds," and explained that where chemical methods could not be applied optical methods could be employed to reveal the character of the compound. This is done by observing to what extent the optical functions of the different constituents of a compound persist, or otherwise in the compound itself. In this way it has been shown in the case of sodium camphor-carbonic salts that the sodium has similar optical functions to those it has in sodium alcoholate and so indication is obtained that it is in a similar state of combination.

AMMONIUM REACTIONS.

In a paper by Professor W. R. E. Hodgkinson and Mr. A. H. Coote on "Some Reactions between Ammonium Salts and Metals" it was stated that ammonium nitrate, either in aqueous solution or in a fused state, acts very vigorously on some metals. There is a notable difference, as a rule, between the fused salt and its aqueous solution in regard to rate of action on the more common metals; but in the case of the metal cadmium there is little difference perceptible between the rate of action of an aqueous solution and the melted salt. Cadmium placed in an ice-cold saturated solution of ammonium nitrate rapidly dissolves without evolution of gas. The liquid becomes alkaline from presence of a little free ammonia; the solution gives off nitrogen only when heated to 100°, when the cadmium ceases to dissolve and some remains in excess. The solution contains a little free ammonia, and apparently the nitrite of cadmium and ammonium. Zinc and magnesium act in a similar manner. Aluminium, iron, mercury, and silver are unaffected by an aqueous solution of the salt, but nickel, copper, and lead are slightly active. Lead becomes coated with a somewhat insoluble nitrite. Melted ammonium nitrate has no action on iron, mercury, or aluminium, but when the salt is just fused the following metals are acted upon at rates about in the order given—cadmium, magnesium, zinc, copper, nickel, lead, bismuth. Powdered cadmium dissolves in a solution of aniline nitrate.

RADIUM

naturally received attention in this section, and Sir William Ramsay, speaking on the changes produced by the β -rays, made an interesting announcement. He said that he had obtained 105 milligrams of radium bromide, which, being too precious to risk in one vessel, were divided amongst three bulbs. These bulbs were placed in glass vessels, and were each provided with a tube to take away emanations. The vessels were colourless to start with, and were some of potash and some of soda glass, but in course of time the former became brown and the latter violet in colour. The glass, too, became radioactive, but this property was removed by washing with water, although the

colour remained. When a solution of radium bromide was evaporated an invisible residue was left which was radioactive and dissolved to a radioactive solution. Radium formed chloride, sulphide, hydroxide, and sulphate similar to lead, except that they are radioactive. The radium emanations render silver and platinum as well as glass radioactive. In a note on "The Influence of Radium Radiations on Atmospheric Oxidation in Presence of Iron," Mr. H. J. H. Fenton stated that the oxidation of certain hydroxy-compounds, such as tartaric acid or glycol in presence of iron, may be brought about by atmospheric oxygen in presence of sunlight, and that the products are the same as those obtained when hydrogen dioxide is employed as oxidising agent. It has now been found that the influence of radiations from radium bromide may in certain cases produce effects similar in this respect to those obtained by exposure to sunlight.

Professor C. Dieterici described a method for determining

THE SPECIFIC HEAT OF WATER

at temperatures up to 300°C ., the water being enclosed in quartz tubes, sufficiently strong to withstand the pressure of steam—namely, about 100 atmospheres at 360°C ., and the determinations made with the aid of the ice calorimeter. He has observed that the specific heat of water increases considerably with the rise of temperature. He has developed an accurate formula for calculating the specific heat of steam, and from its application he concludes that at about 200°C ., the specific heat of superheated steam at constant volume is 0.5, and is practically independent of the volume if the latter is much greater than the saturation volume. As, however, the volume diminished to the volume of saturation the specific heat increases to about 0.7. The specific heat at constant pressure similarly varies from 0.6 to 0.8.

COCOANUT CHARCOAL.

Sir James Dewar gave an interesting address on "New Low-temperature Phenomena," in the course of which he gave some details of a new line of research as to the absorption of gases by charcoal. Of the various kinds of charcoal experimented with, coconut charcoal was found to be the most active. Sir James has been using the charcoal as an absorbent for residual gases. With coconut charcoal in a tube immersed in liquid air, an almost perfect vacuum can be obtained. When a continuous current of air was passed over chilled charcoal the escaping gas was at first all nitrogen, and in a quarter of an hour the gas held by the charcoal contained as much as 60 per cent. of oxygen instead of the usual 21 per cent., and by simply raising the temperature this 60 per cent. air could be collected. All gases are absorbed in larger quantities at -185°C . than at 0°C .; helium is absorbed in smallest quantity, and then follows hydrogen, nitrogen, argon, carbonic oxide, and oxygen, but with gaseous mixtures the absorption is still greater. It is probable that a means of obtaining 5° absolute is here indicated.

INVENTIONS AND PATENTS.

The Hon. C. A. Parsons, in his presidential address before the Engineering section, pointed out the interdependence of the scientist and the civil engineer, and described how the work of the latter has been largely based on the discoveries of the former. The very common conception, given in dictionaries and encyclopædias, that invention is a happy thought occurring to an inventive mind, gives an entirely erroneous idea of the formation of the great steps in advance in science and engineering, and leads to forgetfulness that almost all important inventions have been the result of training, laborious research, and long-continued labour. Generally, what is usually called an invention is the work of many individuals, each one adding something to the work of his predecessors.

The speaker then traced the evolution of the internal-combustion engine, which could, he said, have been much hastened by more favourable patent laws or by legislature to assist a worker attacking difficult problems. What a waste of time, expense, and disappointment would be avoided if in England the patentee was helped to find out easily what had been done previously, on the lines adopted by the United States and German Patent Offices, which advised the patentee after the receipt of his provisional specification of the chief anticipatory patents, dead or

alive! The present patent law has some curious anomalies. Suppose some inventor has the good fortune to place the keystone in the arch of an invention, to add some finishing touch which made the whole a complete success; then others tried to reap the results of his labour, and perhaps it was discovered that another had first suggested the same keystone in some long forgotten patent or obscure publication, but for some reason or other the public were none the better for his having done so. What did the law do? It said this was an anticipation, and instead of apportioning to all parties reasonable and equitable shares in the perfected invention, to which no one could object, it said that the patent was injured or perhaps rendered useless by the anticipation, and that its value was thereby diminished or destroyed, and it was thrown open to the public. Up to a few years ago, any anticipations, however old, might have been cited; but recently the law has been amended, and at present none ranked as anticipations which were more than fifty years old.

Mr. Parsons suggested that the life of a patent might be extended, such matters to be under the jurisdiction of a central international committee.

CONSCIOUSNESS IN PLANTS.

Mr. Francis Darwin, in his address to the Botany section, dealt with "The Perception of the Force of Gravity by Plants." He summarised the evidence, which might help to form a conception of the mechanism of the stimulus which called forth one of these movements—namely, geotropism. The modern idea of the behaviour of plants to their environment has been the growth of the last twenty-five years; though, as Pfeffer has shown, it was clearly stated in 1824 by Dutrochet, who conceived the movements of plants to be "spontaneous"—i.e., to be executed at the suggestion of changes in the environment, not as the direct and necessary result of such changes. He had been in the habit of expressing the same thought in other words, using the idea of a guide or signal, by the interpretation of which plants are able to make their way successfully through the difficulties of their surroundings. In the existence of the force of gravity we have one of the most striking features of the environment, and in the sensitiveness to gravity which exists in plants we have one of the most widespread cases of a plant reading a signal and directing its growth in relation to its perception. He used the word perception not to imply consciousness, but as a convenient form of expression for a form of irritability. It is as though the plant discovered from its sensitiveness to gravity the line of the earth's radius, and then chose a line of growth bearing a certain relation to the vertical line so discovered, either parallel to it or across it at various angles. This, the reaction or reply to the stimulus, is, in his judgment, an adaptive act forced on the species by the struggle for life.

THE STEMS OF PLANTS.

Lord Avebury read a paper on the forms of stems of plants. Some, he said, have round stems, some square, some triangular, some pentagonal. No doubt there are reasons for these and other forms, but no explanation is given in botanical works. It is important for plants, as for architects, to obtain the greatest strength with the least expenditure of material. To do this it is necessary that the plant should be equally liable to rupture at every point when the strain is equal. If not it is obvious that a certain amount of material might be removed from the strongest part without increasing the danger of rupture. If the stem of a plant or any other pillar is affected by pressure, say of wind, one side would be extended and the other compressed, while between them would be a neutral axis, and both extension and compression would be greatest along the surface furthest from the neutral axis. It followed, therefore, that the strongest form is where the material is collected as far as possible from the neutral axis. The two bars cannot, however, be entirely separate, and must, therefore, be connected by a bar or bars. This is the origin of the well-known girder. If the forces to be resisted act in two directions at right angles to one another, two girders must be combined, one at right angles to the other. If the forces act in all directions, a circular series of girders would be required. This is the reason for the prevalent round form of stems. The question then arose, why is this form not universal? As regards plants

having quadrangular stems, when the leaves are in opposite pairs, each pair at right angles to those above and below, as for instance in the dead nettle, the strain would be mainly in two directions, and the "double girder" would be the best form. If so, quadrangular stems would be found associated with opposite leaves. In fact, plants in the British flora with quadrangular stems always have opposite leaves, and plants with opposite leaves have generally, though with exceptions, quadrangular stems. Triangular stems might be accounted for by the same considerations. Many Monocotyledons, but not all, have the leaves in threes. Sedges, for instance, all have more or less triangular stems, while in grasses they are round. But sedges have leaves in threes, while in grasses they are distichous—i.e., in two rows or ranks. In plants with pentagonal stems, the same relation prevailed. The bramble, for instance, has a stem more or less pentagonal, and the leaves are in whorls of fives—a character which throws light on the number of petals and sepals. Plants thus have worked out for themselves, millions of years ago, principles of construction which secured the greatest strength with the least expenditure of materials and which have been gradually applied to the construction of buildings by architects and engineers.

In a sub-section of the Botanical section

AGRICULTURAL PROBLEMS

were dealt with. Dr. Somerville, the chairman, recalled the fact that at the first meeting of the Association Lindley reported on the fœcal excretions of plant roots. These excretions he held to be poisonous, maintaining that although plants generated poisonous secretions, they could not absorb them by their roots without death, concluding that "the necessity of the rotation of crops was more dependent upon the soil being poisoned than upon its being exhausted." The harmful influence of growing grass on fruit trees has recently received attention at the Woburn Fruit Station, and it has been shown that this prejudicial influence is not due to the withdrawal of moisture, to the curtailment of supplies of plant food, to interference with aeration, or to modifications of temperature, but the opinion is now held that the cause of the action of grass is due to some directly poisonous action which it exerts on the trees, possibly through the intervention of bacteria, or possibly taking place more directly. The valuable work of Lawes and Gilbert on the subject of artificial manures was dealt with, and in this connection the curious fact was mentioned that according to the researches of Pfeiffer the excessive loss in the value of farmyard manure is best avoided by storing in a compressed condition. Moss litter being acid is better adapted for absorbing and fixing ammonia. Dealing then with the chemical fixation of atmospheric nitrogen, the recent production of electrolytic nitrate was mentioned, the cost of electric nitrate as compared with Chili nitrate being stated to be in the proportion of 24 to 39. Good progress would also appear to have been made in the commercial fixation of atmospheric nitrogen, and it would appear from recent reports that agriculture will not have long to wait till it is placed in the possession of new supplies of that most powerful agent of production, nitrogen, and Sir William Crookes will see the fulfilment of his prediction that "the future can take care of itself."

The use of "nitragin," a specific culture of the nodules of the roots of leguminosæ intended for artificial inoculation of legumes, has not been altogether successful. The nitragin put on the market was used in two ways, being either applied directly to the fields, or mixed with water and brought into contact with the seed before sowing. Under the former method of procedure an increase of crop was obtained only when the nitragin was used on land containing much humus. The explanation given for failure under other conditions was that the bacteria artificially introduced perished for want of food before the leguminous seed germinated and produced plants. Failure of the nitragin to effect an improvement in the crop when it was sprinkled on the seed was now believed to be due to the action of secretions produced by the seed in the early stages of germination. This difficulty was found to be got over by moistening the seed and allowing it to sprout before the nitragin was applied, but in practice supplying the nitragin

with a nutritive medium of skim milk, grape sugar, and pepton is found more convenient.

SCHOOL-LEAVING CERTIFICATES.

A discussion on the new school-leaving certificate scheme of the Board of Education was introduced by Professor Armstrong in the Educational Science section. The question has entered upon a new phase, and a more hopeful situation has been created since on July 12 last the Board of Education, Whitehall, issued suggestions for a system of school certificates which have been submitted to the Board by the consultative committee. It is to be noted that the Board refrain, in offering the scheme for public criticism, from the expression of any view as to the desirability or feasibility of the proposals, and are not at present committed to any action in the matter. The Scotch Education Department had long granted leaving-certificates in single subjects; since 1902 it has given certificates for success in groups of subjects. There is a tendency more and more to correlate examination with inspection, and to call in the services of the teachers as well as to take into account the work done by scholars during their school career. Examinations are held under the Central Welsh Board of Intermediate Education and upon them certificates are granted which meet with a limited amount of recognition in lieu of other examinations. Some of the examinations held by the Oxford Delegacy of Local Examinations, the Cambridge Syndicate of Local Examinations, and the Oxford and Cambridge Schools Examination Board serve the purpose of leaving-certificates in a measure, inasmuch as they carry exemption from certain qualifying examinations; but these examinations are conducted by boards unconnected with the schools, and do not take into cognisance the work of the scholars. The University of London has recently put in operation a scheme for the award of leaving-certificates to scholars in schools under inspection approved by the University. In none of the English examinations is the opinion of the teacher of the pupil's abilities taken into account in the manner customary in the German Abiturienten-Examen. In the United States certain of the universities have taken a step far in advance of European practice by admitting (without examination) pupils from recognised high schools.

Sir A. Rücker said his main feeling in regard to the scheme of the Board of Education was one of great disappointment, because the consultative committee have not really faced the difficulties of the situation. It is easy to draw up a scheme which would work well if one is starting *ab initio*. But the situation is complicated by the fact that the Universities of Oxford, Cambridge, and London stand on a separate footing, in that for many years they have held what are at least the nearest possible approach to school-leaving examinations. Frankly, it is necessary to consider the finances of the whole position, and this point the consultative committee have put completely on one side. Mr. Gray, M.P., said the consultative committee were bound to have regard to the interests of the children rather than to the fees of any university. The scheme will revolutionise the secondary schools of the country and be equivalent to a large addition to the length of the school life of a child. The Rev. R. E. Swallow said the Headmasters' Association are strongly opposed to the examinations being fixed by a central board, and Principal Griffiths thought that a central board would involve too much routine and red tape. Sir Oliver Lodge said the scheme was allied to one which the Birmingham University intend to put into practice. They proposed there to hold school examinations in which the teachers will be asked to co-operate, and in which the certificates will be awarded in consultation with the teachers. In time all the universities will no doubt recognise each others results, for at present the multiplicity of examinations is intolerable, and the preparation for purely external examination is not good for methods of teaching. The business of the university or educational centre of the district is simply to unify the standard of examination as much as possible.

HONORARY DEGREES

were conferred by the University of Cambridge on seventeen distinguished members of the British Association, the ceremony taking place on August 22. Amongst those on whom the honorary degree of Doctor of Science was conferred were the following:

Professor Henri Becquerel, Professor of Physics in the Ecole Polytechnique, Paris, who was welcomed as a distinguished member of the French Academy of Science, whose father and grandfather had attained the same high distinction. He has given proof of his hereditary powers of research by his remarkable discovery of the radio-activity of uranium, and the light of his own example has kindled a new interest in similar researches on the part of others.

Professor Bruhl, of Heidelberg, had during the last twenty-four years established the relation between the optical properties of chemical compounds and the arrangement of the atoms in the molecule.

Professor Adolf Engler, Professor of Botany in the University of Berlin, author of a comprehensive system of botany, and explorer of the flora of East Africa and of South America.

Sir Norman Lockyer, Director of the Solar Physics Observatory, South Kensington, whose researches in spectrum analysis have proved him to be one of the most successful explorers of the interesting region that lies between the provinces of physics and astronomy.

Sir William Ramsay, Professor of Chemistry at University College, London, who has distinguished himself by his researches on the constituents of the air; in conjunction with Lord Rayleigh, he discovered Argon, and he has traced the Helium of the sun in certain minerals of the earth. He has also detected in the air Neon, Krypton, and Xenon.

Professor Arthur Schuster, Professor of Physics in the Victoria University of Manchester, a co-worker with Clerk-Maxwell and Lord Rayleigh.

Sir William Turner Thiselton-Dyer, Director of the Royal Botanic Gardens at Kew, son-in-law of another distinguished botanist, Sir Joseph Hooker, who received an honorary degree at Cambridge thirty-eight years before. His name is associated with the flora of the Valley of the Thames, and of South and Central Africa.

Births.

FIELDING.—On August 19, at 2 Holmwood Terrace, Southern Road, Cork, the wife of Patrick J. D. Fielding, F.C.S., pharmaceutical chemist, of a daughter.

FUERST.—On August 23, at 11 Upper Avenue Road, N.W., the wife of Jules Fuerst, of a son.

NOBLE.—On August 15, at 110 Mill Lane, West Hampstead, N.W., the wife of Charles A. Noble, chemist and druggist, of a son.

Marriages.

EDWARDS—TAMBLYN.—At St. Mary's, Par. on August 15, Percy W., son of the late Mr. Thomas Edwards, chemist, Devizes, to Annie Louisa, eldest daughter of Mr. Alfred Tamblyn, of Par.

TEBB—SOUTHWICK.—On August 18, at St. Andrew's Church, Hull, Harry Tebb, chemist and druggist, son of Mr. John Tebb, chemist and druggist, Hull, to Isabella, daughter of Mr. William Southwick, of Hull.

WARDLEY—SMART.—At Thetford, on August 11, Samuel Frederick Wardley, chemist and druggist, of Tonbridge, to Alice Smart, of Thetford.

HATRICK—CAMERON.—On August 17, at Grove Park Church, Chiswick, Charles Dainty Hatrick, M.D., second son of Mr. James L. Hatrick (J. L. Hatrick & Co. (Limited), 70 St. John Street, E.C.), to Jessie, eldest daughter of Mr. Peter Cameron, of Balchandy, Pitlochry.

WANT—BROWN.—On August 23, at St. James's Church, Hatcham, S.E., by the Rev. A. E. Prue, William Phillip Want, pharmaceutical chemist and Editor of "The British and Colonial Druggist," of Lewisham, to Alice, second daughter of the late Mr. George Brown, of the Admiralty, S.W., and of Mrs. Brown, 28 Shardeloes Road, New Cross, S.E.

WILSON—SNEATH.—On August 18, at Duncombe Street Wesleyan Chapel, Grimsby, by the Rev. J. Stringer, assisted by the Rev. E. Bulmer, John Arthur Wilson, of Grimsby, to Eleanor, second daughter of Mr. Thomas D. Sneath, chemist and druggist, Grimsby.

Deaths.

DOXEY.—On August 14, at 210 Chorley Road, Swinton, Lancs, Mr. George Doxey, chemist and druggist, aged eighty-nine. Mr. Doxey was a native of Swinton and commenced life at an early age in a cotton mill. He was a "dresser" for twenty-four years, and meanwhile interested himself in the work of an apothecary. Forty years ago he left the mill and opened a shop at Chorley Road, where he carried on business until 1891, when old age and infirmity compelled him to retire into private life.

FRYER.—At High Street, Upper Mill, Saddleworth, Yorks, on August 22, Mr. John Fryer, chemist and druggist. Mr. Fryer accidentally fell downstairs and died immediately.

GIBSON.—At 4 Eildon Street, Edinburgh, on August 19, Mr. Adam Gibson, F.C.S., pharmaceutical chemist, sole partner of the firm of Pinkerton, Gibson & Co., wholesale druggists, Edinburgh, aged fifty-eight. Mr. Gibson attended the recent meeting of the British Pharmaceutical Conference at Sheffield with his elder daughter, and returned to business on Monday of last week, in apparently sound health. On Friday morning, after breakfast, he was seized with cerebral hæmorrhage and heart failure, and died at noon, not having recovered consciousness. Mr. Gibson was a prominent Scotch pharmacist, almost as well-known South of the Tweed as he was in the North, and those who knew him intimately had a high regard for his abilities as a chemist and a pharmacist. He was the son of a Dunfermline linen manufacturer, and after a sound classical education in the principal school of the Fifeshire town, he was apprenticed to the late Mr. Gavin Stiell, one of the founders of the North British Branch, who was noted in his day for efficient training of apprentices. When his indentures were completed Mr. Gibson went to Edinburgh, where, while acting as a chemist's assistant, he studied at the University for two years. This period had a strong influence upon his career. He then went to London for a short time, where he had wholesale experience. It was, however, his intention to pursue a professional career, and accordingly he returned to Edinburgh, but was laid aside by a severe and almost hopeless illness for nearly a year. Recovering sufficiently, he went to Leven to recuperate, and purchased about thirty years ago a pharmacy there, which gave ample opportunity for a quiet life; but the man's strong characteristics got the upper hand and he soon became known as the cleverest chemist in the East Neuk. Besides making a good dispensing-business he secured a not inconsiderable analytical practice, and he relieved such tedium as there was by taking now and then a pupil for the pharmaceutical examinations. Those who had the good fortune to benefit by his tuition, and the writer of this note is one of them, learnt far more from him than the examiners required, for they assisted Mr. Gibson in his analytical work and in the manufacture of numerous pharmaceutical products, for which he had acquired a wholesale connection. While in Leven Mr. Gibson contributed several papers to the North British Branch, the more notable being on solutions of hypophosphites and extract of Calabar bean. The research for the latter brought out, for the first time, the notable fact that 60-per-cent. alcohol extracts more alkaloid than rectified spirit. Mr. Gibson was appointed a member of the Pharmaceutical Board of Examiners for Scotland in 1882, and served in that capacity for many years, also as a member of the Scottish executive. In 1888 he joined the late Mr. William Pinkerton in founding the wholesale business in Edinburgh with which his name was connected, and after Mr. Pinkerton's death continued it with marked success.



In the wholesale he carried out his retail idea of making everything himself, and those who knew him well thought little of the rough exterior ("pit claes," he fondly called it) which he donned when he entered his laboratory of a morning. It is difficult to estimate the loss to British pharmacy of such a man as Mr. Gibson; he spoke little publicly, and writing was a labour to him, but association with him stimulated effort, originated ideas, and made his pharmaceutical friends the better for the occasional periods of intimacy. Socially he was a highly esteemed man. He was a keen angler, and one of his *confreres* in that sport says "he was always good company, in fishing or pharmacy." He is survived by Mrs. Gibson and two daughters. The funeral took place at Warriston Cemetery on Tuesday, when a large company, including many pharmacists, attended. The pall-bearers were Mr. Peter MacEwan, Mr. Alexander Wilson (A. B. Fleming & Co., Limited), Mr. Elder (cousin), Mr. James Stott (representing the staff of Pinkerton, Gibson & Co.), Mr. Ralph Tully (nephew), Mr. Robert Lambert (S. Lambert & Co., London), Mr. D. B. Dott (Chairman North British Branch of the Pharmaceutical Society), and Mr. Grafton (representing the anglers of Edinburgh). The Rev. Mr. Brebner, St. Bernard's Established Church (of which Mr. Gibson was a member), conducted the religious service.

GOSTLING.—On August 16, at Fernleigh, Southend. Ernest Gostling, chemist and druggist, of Market Square, Waltham Abbey, aged thirty-four.

HEADER.—At Rocombe, Paignton, on August 22, Mr. William Header, chemist and druggist, aged eighty-three. Mr. Header was the founder of the well-known dispensing business of Header & Riches (now carried on by Mr. W. Douglas) at Victoria Parade, Torquay. He had been retired from business, however, for over twenty years. The funeral took place at Torquay Cemetery on August 25.

HILLIDGE.—At Preston, on August 10, Mr. George Hillidge, chemist and druggist, of 140 Friargate, aged eighty-one.

MUNDAY.—On August 18, at Fore Street, Tiverton, Mr. Joseph Munday, chemist and druggist, late of Bridgnorth, aged forty-five. Mr. Munday was born at Bridgnorth, Shropshire, and in later years spent some time in Cardiff as manager for his brother's chemist's business. He went to Tiverton in 1887 and purchased the chemist's business carried on for many years by Mr. Frederick George Tuck. Of a genial and kindly disposition, Mr. Munday soon made a wide circle of friends, by whom his loss will be keenly felt. He was a prominent Freemason, being P.M. St. Peter's, 1,125; P.P.G.J.D., P.Z.R. Arch. St. Peter's, 1,125; P.P.G.A.S., P.M. St. Peter's Lodge Mark Masons 187, P.P.G.S.D. Mr. Munday was particularly fond of horses, and it was said he knew nearly as much about them as a veterinary surgeon. He leaves a widow and one little girl, with whom much sympathy is felt. The funeral took place on August 21, amid many manifestations of sympathy and respect.

SAWER.—On August 23, at 6 Cleveland Road, Brighton. Mr. Charles John Sawer, F.L.S., F.C.S. Mr. Sawer was an enthusiastic botanist, and well known as the author of "Odorographia," a book dealing exhaustively with the plants yielding essential oils. Mr. Sawer was a frequent contributor to the columns of THE CHEMIST AND DRUGGIST. As recently as the "Summer Issue" we published an article from his pen on "Citronella and Lemongrass," in which the botanical uncertainties in regard to these grasses were cleared up. This is a good example of the thoroughness which characterised Mr. Sawer's work, and knowing, as we do, the immense trouble he took in obtaining his facts and in verifying his references, we are the better able to testify to the value of his work. Mr. Sawer was formerly in business in Mincing Lane, but retired twenty years ago, since when he has spent his leisure in research work.

SHAW.—At 21 St. James's Street, Liverpool, on August 15, Mr. John Shaw, chemist and druggist, aged eighty-seven. Mr. Shaw was born at South Kirkby in 1817, and was apprenticed while still a youth to a chemist and druggist at Leeds. He went to London in the year of Queen Victoria's accession, and, having acquired experience in the Metropolis and at Scarborough, commenced business for himself in Edinburgh in 1843. In 1856 Mr. Shaw went to Liverpool, where until the time of his retirement in 1881 he

was in business as a chemist. He was a member of the Pharmaceutical Council from 1871 until he resigned in 1880. While in Edinburgh he was a member of the Board of Examiners. He was a man of thoughtful mind and religious sympathies. For seventeen consecutive years he was churchwarden of St. Barnabas, Parliament Street, Liverpool, and subsequently, when that church was taken down, and the parish merged into that of St. Michael's, Pitt Street, he served as a member of council in the latter church, and as its lay representative on the Ruri-decanal and Diocesan Conferences until the time of his death. Mr. Shaw was an ex-president of the Liverpool Chemists' Association, and of the Liverpool Naturalists' Field Club. He was also hon. treasurer of the Liverpool Penny Savings Bank Association and of the Rural Deanery of Liverpool South. He leaves a son and daughter, Dr. J. Hepworth Shaw, of the South Dispensary, Liverpool, and Miss L. B. M. Shaw, who is well known in connection with the work of the Church of England Sunday School Institute. The funeral took place in St. James's Cemetery, Liverpool, on August 18.

Personalities.

MR. THOMAS TYRER, F.L.C., F.C.S., and Mrs. Tyrer left Southampton by the *St. Paul* on Saturday, August 20, for New York.

MR. GEORGE CULLING, who for many years represented Messrs. H. Gilbertson & Sons, and Messrs. Maw, Son & Sons, has gone to represent Mr. William Toogood, of Heddon Street, Regent Street, W., in the North of England and Ireland.

MISS LUCY E. SPENCER PALMER (14), daughter of Mr. J. Spencer Palmer, chemist and dentist, Thornbury, has passed the Oxford Preliminary examination with first-class honours and distinction in English.

MR. J. WRIGHT KIRBY, senior North London representative of the firm of Hockin, Wilson & Co., of New Inn Yard, Tottenham Court Road, London, W., is at present suffering from a chill, but hopes soon to resume his usual calls.

ACCORDING to the "Oxford Chronicle," Mr. G. Claridge Druce, M.A., pharmaceutical chemist, and ex-Mayor of Oxford, has "rather definitely" declined an invitation to stand as Liberal candidate for the North Berks parliamentary division at the next General Election. Mr. Druce's decision is a misfortune for pharmacy.

MR. SYDNEY DUNSTAN, chemist and druggist, of Bodilly, Helston, Cornwall, has been appointed head dispenser to the Royal Infirmary, Newcastle-on-Tyne. Mr. Dunstan served his apprenticeship with Mr. R. S. Edwards, chemist, Redruth, and was afterwards with Messrs. Barron, Harveys, and Co., London. After qualifying he was for some time a dispenser at the London Hospital.

SIR MARCUS SAMUEL, ex-Lord Mayor of London, has just received, through the Japanese Minister, Viscount Hayashi, the Order of the Knight Commandership of the Rising Sun, conferred upon him by the Emperor of Japan. The firm of which Sir Marcus Samuel is the head is known to the drug-trade as the holders of the camphor-monopoly from the Japanese Government; but apart from this they have been intimately associated with the trade of Japan and Formosa for a period of twenty-five years as bankers and merchants.

INSURANCE FOR DRUGGISTS.—Plans which have been forming for some time to establish mutual-insurance companies among druggists have been brought to a full stop. The Kentucky movement has been permanently abandoned because of the enactment of a State law which would make it necessary for the proposed company to make a cash deposit of 100,000 dollars before beginning operations. In New York State operations have been suspended until a suit now before the courts shall have been decided—a suit which will determine "the right of individuals to reciprocate insurance indemnity." Druggists in several States insist that the old line companies charge them extortionate prices and this has led to the establishment of three very prosperous mutual insurance companies in North Dakota, Ohio and Wisconsin.

Scientific Progress.

Quercetin.—The bark of *Quercus tinctoria* is the source of this important dye-stuff, which is so closely related to the active principles of many drugs. Lampe and Tamlor have ("Berichte," 1904, 1402) effected its synthesis from considerably simpler compounds, and have shown conclusively that it is a tetr-oxy-flavonol.

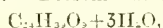
Oil of Burdock.—Hæma has distilled this oil from the herb, and obtained a yield of 0.176 per cent. It is an acid oil, of specific gravity 0.9695 at 25°, and optical rotation +1° 15'. Its acid-value is 13.5, and its ester-value 225. It is easily soluble in 80-per-cent. alcohol. Among the acids present, palmitic acid was separated and identified.

Storax-adulteration.—According to Ahrens and Hel ("Ber. d. Deutsch. Pharm. Gessel." 1904, 3), coniferous resins are often used to adulterate storax. To estimate these the authors recommend rubbing down the storax with sand and exhausting with petroleum ether. Storax is insoluble in cold petroleum ether, while coniferous resins are very easily dissolved by it. The acid-value of genuine storax is said to be 40 to 55, and the ester-value about 150. Adulteration with resin raises the acid-value and lowers the ester-value.

Cannabinol.—Fraenkel claims to have isolated cannabinol, the active principle of hashish, as a pure, well-defined, chemical individual. He prefers the name "pseudo-cannabinol" for the inactive substance separated by Wood, Spivey, and Easterfield. The formula of Fraenkel's pure body is $C_{21}H_{32}O_2$. It is a pale-yellow oil of thick consistency. It distils at 215° C. *in vacuo* (0.5 m.). It is easily soluble in alcohol, acetone, ether, chloroform, toluene, acetic acid, and petroleum ether. Fraenkel considers it to be a monohydric phenol aldehyde of the constitution $C_{21}H_{31}O_2$. It is probable that Indian hemp owes its activity entirely to this body.—*Merck's "Report."*

Standardising Disinfectants.—The Rideal-Walker bacteriological method of testing disinfectants (*C. & D.*, December 12, 1903, page 975) is the subject of a note in the "Lancet" by Drs. Simpson and Hewlett. These experimenters find that the method, while very simple and accurate for organisms which form abundant, uniform, and diffuse growths in young broth cultures, is not nearly so satisfactory for an organism that forms a scanty, flocculent, and coherent growth in broth like the bacilli of plague or anthrax, in which case a suspension of an agar culture is to be preferred. The authors find that the "carbolic-acid coefficient" of formalin for the plague bacillus averages 0.3 and that of cyllin 34.

Dioscin.—Honda ("Chemiker Zeitung," 1904, 162) has examined the Japanese plant *Dioscorea Tokoro Muikuo*, and has isolated two new substances from it. Of these one is a crystalline body to which the name "dioscin" has been assigned, and the other is an amorphous body, which is termed "dioscorea sapotoxin." Dioscin has the formula



and forms white needles melting at 247°–280°. It is very insoluble in water, ether, and acetone, but easily soluble in alcohol and acetic acid. It is strongly levorotatory. It contains hydroxyl groups, yielding an acetyl derivative. It is a glucoside which decomposes on hydrolysis, with the formation of a dextrorotatory sugar and a crystalline body not further examined. The sapotoxin is a white amorphous powder of the formula $C_{21}H_{32}O_2$, melting at 172°. It is easily soluble in water, alcohol, and alkalis. It is levorotatory, and forms a benzoyl derivative.

Chemical Action Produced by Radium.—Sir William Ramsay and Mr. W. Tennant Cooke in "Nature" state that one of their investigations on the chemical action of radium bromide has yielded results so extraordinary that they think it well to direct attention to the results. On the Rutherford-Soddy hypothesis of the disintegration of the radium atom, an enormous amount of energy is evolved, and at least one simpler product is formed—namely, helium, which is slowly produced during the disintegration of the emanation, which Mr. Soddy and one of the authors have shown to be a gas, following Boyle's Law; and with Dr. Collie the spectrum has been investigated. It has, of course, often suggested itself that such a change should be reversible; that is, that by imparting a sufficient charge of energy to any atom, it should be transformed into different matter, probably by the building-up of a more complex structure. Now, the only known source of energy in such a concentrated form is that which is given off by radium and its products during their disintegration. The facts which have to be chronicled appear to point towards such a synthesis. During experiments on the emanation, about 105 mgms. of radium bromide, dissolved in water,

was kept in small glass bulbs, connected to a pump. To protect the bulbs against accident, each was surrounded with a small beaker, one of potash-glass and two of soda-glass. The former was coloured brown in the course of some six months, the latter violet. On altering the apparatus these beakers were discarded. They were all found to be radio-active on both surfaces, and, what is most remarkable, *the radio-activity was removed by washing with water.* The solution contains an emanation, for on bubbling air through it, and cooling the gas with liquid air, the issuing gaseous air is only feebly active; the main part of the activity was retained in the cooled bulb. This substance can be carried into an electroscope by a current of air, and when the current passes, the electroscope is discharged; but the period of decay of the emanation is very short, and in that respect resembles the emanation from actinium. The research is not sufficiently advanced to permit of a complete account of the other products, but it may be mentioned that from the solution which has lost all emanating power further active products are obtainable, some of which are precipitable along with mercurous chloride, some along with mercuric sulphide, some with ferric oxide, and some with barium sulphate. The behaviour is different, according as potash- or soda-glass is used. That this is not a case of a body being thrown down by any precipitant has been abundantly proved; for example, precipitation along with mercurous chloride or sulphide failed to remove the activity from one sample, while the precipitation of ferric hydroxide in the solution completely threw down the radio-active material. There appear to be several radio-active bodies present which can be separated by the ordinary processes of qualitative analysis. These substances, it must be remembered, are the products of *beta* and *gamma* rays in conjunction with the material on which they impinge. A silver crucible, too, becomes radio-active on the exposed surface only when placed in the path of *beta* rays. It is important to note that these changes are not due to the material having been in contact with radium or any of its products; they are solely due to the *beta* and possibly to the *gamma* rays. The order of the activity is the same as that of 1 mgm. of old uranium oxide, U_3O_8 .

Association Ballads.

THE PURPOSE.

*The men, their aims, their daily irk;
Their troubles, trials, thoughts, and views
On things politic, foes that lurk
In friendly guise, but treach'rous work—
These be the burden of our Muse.*

XXXIII.—INVERNESS.

O where, tell me where, have the Invernesians gone?
O where, tell me where, have the Invernesians gone?
They used to meet and talk once of deeds that should be done,
But, alas! Highland helping their brethren now have none,
O where, tell me where, did the Invernesians dwell?
O where, tell me where, did the Invernesians dwell?
They dwelt up in the Highlands; some followed Jacob Bell,
But the brave men of Bloomsbury they love not now so well.
O what, tell me what, did the Invernesians do?
O what, tell me what, did the Invernesians do?
They dealt in drugs and sundries, and slaved the whole year
through,
And its O, in their hearts they were sad as me, or you.
O why, tell me why, were the Highland laddies sad?
O why, tell me why, were the Highland laddies sad?
They wept for bigger profits, their prophets made them mad,
So they used Gaelic language that sounded very bad.
And who, tell me who, gave away their precious boon?
O who, tell me who, gave away their precious boon?
Some say 'twas Chieftain Carteighe that changed their joyful
tune,
But it's O, I'm not sure; so ask Fraser or Bethune.
O when, tell me when, did the Invernesians meet?
O when, tell me when, did the Invernesians meet?
Just write to Mister Connan; he lives in Castle Street.
For it's O, their neglect, it has made me like to greet.
O how, tell me how, will you get them back again?
O how, tell me how, will you get them back again?
We'll sound the joyful pibroch from Shetland to Dunblane,
And it's swift to the summons they'll answer free and fain.
We hope, yes, we hope, that they'll gather to a man;
We hope, fondly hope, they will gather to a man.
For we've need of Junor, Hendry, and all the Cameron clan,
And the Macs and the Ogstons to wreck Camlachie's plan.

Observations and Reflections.

By XRAYSER.

Mr. Balfour's Address

to the British Association was a long way removed from practical politics, and was not much nearer practical science. But as the exercise of a highly cultivated intellect in the region of the latest speculations of research, combining extreme subtlety of thought with delicacy of expression, it deserves a prominent place in recent literature. It suggests no way of utilising modern discoveries; it is towards mystery, not in the direction of utility, that Mr. Balfour's reflections tend. He searches into modern discoveries for the poetry they contain; he scrutinises them to see how far they support the phantasies of philosophy. He analyses keenly the investigations of our master-experimenters, and if he does not say it himself he drives his readers to the Preacher's old conclusion, all is vanity. To prove that matter is not material can hardly become a working hypothesis. "Our knowledge of reality," said the orator, "is based on illusion"; the scientific conclusions "which profess to be entirely founded on experience are to all appearance fundamentally opposed to it"; we have been living in a world of illusions, "down to, say, five years ago," and among these common-sense has been moving "with its most confident step and most self-satisfied smile"; nothing is what it seems to be; experience and observation can only be treated as witnesses to be broken down by cross-examination; and

This is the Paradox:

When we have learnt to regard as errors the obvious teachings of experience and observation, and when we have acquired the lessons which modern crucial investigation provides, the only safe course is to ignore them. Our conceptions of the universe are fancies "which science forbids us to believe, and Nature compels us to employ." The "five-years-ago" epoch to which Mr. Balfour alludes was, I presume, the discovery of radium. Mendeléeff, Berthelot, Oliver Lodge, and other authorities have assured us that radium in no way upsets previous scientific knowledge. "Its properties, as now known," said Sir Oliver Lodge recently, "go indeed beyond the anticipation of theory, but they are all in a line with theory, and there is no difficulty in understanding them, and fitting each into its niche." According to Mr. Balfour, radium has shattered, scientifically, the illusions under which we lived till five years ago; illusions, however, which we must still rely upon in this working world. Is, then, falsehood more useful than truth? he pertinently asks. The philosopher avoids the answer, but his argument insists on an affirmative. We must go on building our houses with bricks under the illusion that they are solid substances, even though science may satisfy us that they are mere aggregations of vortices of electric energy.

A Hundred Years Ago

the scientific world was escaping from the illusions of the preceding century as we are doing now. The French Revolution inaugurated a period of astonishing keenness of intellect. Never, perhaps, was there a time when scientific investigation interested so large a proportion of the reading public. John Leslie made a comfortable competence by translating Buffon. In 1804 Napoleon was preparing his invasion of England at Boulogne, but at that same time the relations between the Royal Society of London and the Institute of Paris were

almost cordial. The atom was just arriving, and the "imponderables" were bowing themselves out. Contrasting the 1804 idea of the material universe with the newest one, Mr. Balfour told his audience that his instinct preferred the notion of all matter constructed out of a single medium to that of one composed of sixty or seventy elements, eternal and eternally different. That may be; the one-material theory may have its attractions; but assuredly the old conception was infinitely more restful. It is not conducive to mental peace to contemplate the unceasing whirl of all molecules, the raging storms of the electrons within the atoms, and the perpetual and varying undulations of the illimitable ocean of intangible ether.

Dr. Thomas Young,

who figured for a moment in Mr. Balfour's sketch of the deluded past, was one of the brightest intellects of the early years of last century. His portrait should adorn the diploma of the Chemists-Opticians' Society when they have one, for it was he more than anyone who mapped out the mechanism of the eye in regard to vision. His essay explaining the power of accommodation of the eye won for him a Fellowship of the Royal Society before he was twenty-one. He subsequently expounded astigmatism, colour-sensation, and colour-blindness. Born in Somersetshire, of Quaker parents, he scarcely required outside instruction. Knowledge seemed innate with him. At fourteen he became classical tutor to one of the Gurneys. At Cambridge he was known as "Phenomenon Young." He qualified as a physician, was the greatest linguist of his day, became foreign secretary of the Royal Society, and was the principal decipherer of the Rosetta Stone, which opened the way to a knowledge of Egyptian hieroglyphics. His lasting fame, however, is due to his experiments with the colours fringing an object interposed between the eye and the source of light, and his inference from these that the colours were caused by the "interference" of separate undulations breaking up the light. The wave theory had been advanced more than a century earlier by Huyghens, but it was Young's proof which has established it. His views were not adopted at the time, and there remains an amusing criticism of them by

Henry Brougham

in the "Edinburgh Review"; amusing, that is, from the pompous complacency with which that equally precocious youth (for Young was under thirty and Brougham only twenty-five) disposed of arguments which he did not understand. There was nothing in Young's work, Brougham wrote, which deserved the name either of experiment or discovery. His paper was destitute of every species of merit; and the Royal Society was severely admonished for allowing such paltry and unsubstantial contributions to appear in its "Transactions." Young replied in a masterly treatise, and Brougham commented on the reply as "emanating from the fertile but fruitless brain of the eternal Dr. Young." His "law of interference" was one of the most incomprehensible suppositions which the confident critic could remember to have met with, and the theory of undulation was fanciful and contradictory. Young concluded his original paper with the pregnant words, "Radiant light consists of undulations of the luminiferous ether." Brougham wound up his review of Young's notable discovery thus: "We now dismiss for the present the feeble lucubrations of this author, in which we have searched without success for some traces of learning, acuteness, or ingenuity that might compensate his evident deficiency in the power of solid thinking." Justly has it been said that we are none of us infallible, not even the youngest of us.

DISINFECTANTS.

The "Sanitas" Co., Lim.,

are the exclusive Manufacturers of the well-known Non-poisonous

"SANITAS" PREPARATIONS;

They also Make and Deal in

"Sodis," "Okol," "Creocelde," "Pinos,"
"Kingzett's Patent Sulphur Fumigating Candles,"
"Sulphugators," "Formic Sulphugators," "Formic Air Purifiers,"
"Formic Fumigators," "Formic Aldehyde"
(40 per cent. Solution, Tablets, and Powder),
Kingzett's Patent Drain Testers, Sheep Dips, Weed Killer,
Patent Preserved Peroxide of Hydrogen,
Carbolic Fluids, Powders, and Soaps,
Eucalyptus Oil, and Permanganate of Potash.

"Sanitas" Pamphlet and "How to Disinfect" Book sent free.

THE "SANITAS" CO., LTD., LONDON, E.

PUREST IN ENGLAND.

BOURNE

SODA, SELTZER,
LITHIA, POTASH, LEMONADE,
GINGER ALE, &c.

Supplied in Six Dozen
Cases,
Carriage Paid, by

TABLE

Analysis, &c., on
Application.

R. M. MILLS & CO.
BOURNE,
LINCOLNSHIRE.

WATERS

West End Agents, WHEATLEY & SONS, 24 South Audley Street, W
And of all Chemists Wine Merchants, Hotels, &c.

JEWSBURY & BROWN'S

MINERAL WATERS.

Ardwick Green, Manchester.

WILCOX, JOZEAU & CO.

49 Haymarket, LONDON, S.W.

WHOLESALE IMPORTERS
OF PHARMACEUTICAL SPECIALITIES

FRENCH & GERMAN PROPRIETARY MEDICINES

PRICE LIST ON APPLICATION.

LOWEST PRICES.

JUST PUBLISHED.

PRICE 7/6 NET.

Squire's Pocket Companion

TO THE BRITISH PHARMACOPŒIA.

"The finished work is in every way up to anticipations. The 'POCKET COMPANION' seems to us destined to enjoy a popularity equal to or greater than that of the mother volume (Squire's 'Companion'), and it is an interesting example of forward development in a well-known work of reference."—*Chemist and Druggist*, July 9, 1904.

Obtainable through any of the Wholesale Houses, or from
SQUIRE & SONS, or from the Publishers,

J. & A. CHURCHILL, 7 Great Marlborough St., London, W.

Established
1879.



Vapo-Cresolene

All Chemists selling Vapo-Cresolene should write for information about the eight-coloured "Cut Out" window-display we are offering. It is unique, handsome, and refined.

ALLEN & HANBURYS Ltd. (AGENTS), 37 Lombard St., E.C., London, Eng.

PATENTS AND TRADE MARKS.

There are many worrying difficulties to be overcome in connection with the Registration of Trade Marks and the grant of Letters Patent, which members of the Retail and Wholesale Drug Trade can avoid by consulting an efficient agent, who would undertake all the trouble for an inclusive fee and obtain protection in the United Kingdom and abroad. Advice in the first instance free. Pamphlets gratis.

REGINALD W. BARKER.

56 Ludgate Hill, London.

£10-0-0 is offered for such information as will lead to the conviction of any person substituting imitations for

Fletcher's Hydrobromates

Fletcher, Fletcher & Co., London & Sydney.

Editorial Comments.

Educational Problems.

MR. JAMES PATERSON, of Aberdeen, presented to the Federation of Local Pharmaceutical Associations an additional paper dealing with his scheme of provincial schools of pharmacy. At the annual meeting of the Federation in Dublin in 1901 Mr. Paterson first suggested that provincial schools of pharmacy, where apprentices and assistants could be systematically trained in the science of their calling, might be maintained on funds derived from Government technical-education grants, the Pharma-

ceutical Society, and local pharmaceutical associations. The claims and needs of pharmacy, it was contended, needed only to be brought before the authorities to ensure recognition. This year Mr. Paterson shows that in Scotland, at any rate, the path is being made smoother for the adoption of his scheme. We gave an abstract of the revised scheme last week, from which it will be seen that money is still wanted from the three sources indicated above. The Pharmaceutical Society are urged to bear the cost of equipment and balance of expenditure over and above the Government grants, but those who have watched the educational policy of the Society are aware that Mr. Paterson's arguments will need to be much more forcible than they are at present before the scheme will receive any attention. It is not yet a recognised part of the politics of Bloomsbury Square to devote the entire profits from the examinations to the advancement of the trade as a whole, and until progress is made in that direction nothing can be expected to be devoted to subsidising pharmaceutical education in the provinces. There is just one point which has not been taken into account in Mr. Paterson's paper, and that is that local technical authorities are not always filled with that spirit of amiability towards pharmacy which they should be if the success of the scheme is to be ensured. In the South we know of a case where the managers of the technical-education funds give every assistance for the holding of classes in pharmacy subjects, the classes having been for some time carried on at an obvious loss. In a northern town, on the other hand, the technical authorities allowed the classes to be carried on on condition that the fees were paid into the funds and that the local association provided the lecturers and lecture-material free of cost to the technical school. That scheme fell through after one session. An optimist to whom we were speaking this week contended that the status of the pharmacist has greatly improved of late years, judged from the standpoint of the relationship existing between the pharmacists and the medical profession. Not only does the medical practitioner of the present day constantly apply to the pharmacist for assistance and advice in pharmaceutical matters, but there is also an increasing disposition on the part of the medical dispenser to hand over pharmaceutical practice to the man specially trained for the work—the legally qualified pharmacist. It seems reasonable to hope (we are quoting our optimist friend) that at no distant date dispensing will be definitely abandoned by medical practitioners, since it is admitted that their knowledge in this direction is very imperfect and that valuable time is absorbed by dispensing which could be more profitably and agreeably utilised in the practice of the profession for which they have passed through a long and rigorous course of study. We hope the separation will take place soon, and that the pharmaceutical authorities may be induced to hasten it by approaching the General Medical Council and the medical profession to impress upon them the desirability of an immediate separation of the practices of medicine and pharmacy. The Pharmaceutical Council have, it is believed, the sympathy of the General Medical Council, and, in addition, excellent reasons for urging the separation of the two functions. One of the strongest reasons for the encouragement of the University training of pharmacists is the strengthening of the *entente cordiale* with the medical profession. The broadening effect on the mind of the student by association and daily contact with those who in after-life become the medical practitioners of the country better fits him to understand them, their aims and work, and the pharmacist's own limitations. He more than ever recognises the dangers which lurk in

counter-prescribing, as well as the incompetence of medical men to practise pharmacy in any form. The domain of pharmacy is probably as varied as that of medicine. There are many branches in each where the specialist has room to make a path for himself right to the top. But in the main the average pharmacist has to concern himself with the sale of drugs, the dispensing of medicines, and the preparation of pharmaceutical compounds—each or all of these with such adjuncts as are suitable to his particular locality. The more he confines himself to pharmacy proper, the higher is his status and the more he commands the confidence and respect of the medical profession and the public. It is to be hoped that those in authority will strive to realise that their duties lie now not so much in the direction of increasing the stringency of the examinations as in promoting the facilities for a sound training for chemists and druggists, realising the reasonable aspirations of chemists to end medical dispensing, and getting proper recognition of pharmacists as the only persons qualified to dispense prescriptions and to conduct the sale of poisons.

Belladonna-culture in U.S.A.

IN our issue of June 25 we gave brief particulars regarding the experimental cultivation of belladonna in the United States, and since then we have received a copy of the "Newark Sunday News" containing an interesting and full account of the progress that has been made. It appears that Mr. F. B. Kilmer, of Messrs. Johnson & Johnson, the well-known plaster-manufacturers, is the prime mover in the business, and so far he is satisfied with the results obtained. As yet, however, his experiments have only been on a small scale, and whether the United States can successfully grow their commercial requirements of belladonna has yet to be determined. At any rate the results of the present venture are being watched with great interest in several quarters, and as the subject of drug-growing is receiving the earnest attention of the United States Government, there is no reason to doubt that the problem will be solved in course of time. Meanwhile there are many difficulties to overcome, as it is not at present known what are the exact climatic conditions under which belladonna can be successfully grown, and from the accounts supplied the propagation of the plant requires extreme care and attention. It was only last year that Mr. Kilmer, after studying the cultivation of belladonna in this country, Germany, and Austria, decided to commence operations on behalf of his firm by planting out several acres in New Brunswick. The first year's work was confined to the development of the plant itself, and a study of its total alkaloidal contents at stated periods of growth. Incidentally, considerable experimental work was done upon other problems. During the second year which is now going forward, the first year's work is being repeated for comparison and verification, and new lines of research begun. Thus far, investigations show that the alkaloidal constituents are present more or less in the entire life-history of the plant, but that they are dispersed and distributed in varying proportions during the growth of the plant. For instance, the seeds themselves contain an appreciable percentage of alkaloid. This is used up by the plant as it grows, and at certain stages it is deposited in larger proportions in one part of the plant than in another. When the plants are in full bloom and have just begun flowering, the assay of alkaloids was found to be as follows:

Dry leaves	...	...	0.578	per cent. alkaloid
Stem	...	...	0.154	" "
Root	...	...	0.293	" "

As the plants grew older, more of the constituents were deposited in the root, and less in the stem and leaf. In plants two or three years old, the percentage found in the root increased in quite a remarkable degree. Mr. Kilmer claims that the above results are much better than those obtained in England, and, as a comparison, he quotes the following figures which relate to cultivated plants grown in England:

First Year's Growth.

Leaves	...	...	...	0.23 per cent. alkaloid
Root	...	...	...	0.21 " "

Same plant, two years' growth in flower.

Leaves	...	...	...	0.36 per cent. alkaloid
Root	...	...	...	0.32 " "

Mr. Kilmer attributes the above results to the method of cultivation adopted, which he considers much superior to those employed abroad, especially when applied to the cultivation of medicinal plants. At the present time the firm have a fourteen-acre plot under cultivation, and are setting out between 50,000 and 75,000 plants, from which they expect to gather a large and valuable crop.

The supply of commercial belladonna has of late years been growing less and less in the producing districts, and the quality has also deteriorated. This is why the United States, who are the largest consumers of the drug, are endeavouring to make themselves independent of outside sources. Of course it must not be readily assumed that if the drug is successfully cultivated a profitable industry will follow, or that American farmers can compete with the present sources of production. Our main supplies come from Germany, where both the wild and cultivated plants are gathered very largely by cheap peasant labour, and this fact alone works against any improvement in quality. Drug-gathering is by no means a settled industry abroad, and with belladonna especially the want of an intelligent system and the haphazard methods employed have brought about a lack of uniformity in quality. It now remains to be seen what the United States can do with a greater efficiency of labour combined with improved methods.

Hong-Kong Poison Regulations.

THE new by-laws dealing with the practice of pharmacy in Hong-Kong, shortly to come into force, have, like most other regulations of the sort, been modelled on the British Pharmacy Acts. The Regulations begin with a list of poisons contained in two schedules exactly the same as those of Great Britain and including carbolic acid. These are stated to be "poisons" in the meaning of the by-laws, and no poison in either part of the list mentioned shall be sold by retail, unless such poison or the vessel, wrapper, or cover, in which it is contained, be distinctly labelled with the name of the article, the word "Poison" in both English and Chinese characters, and the name and address of the seller. Following up the lead of the Mother-Act no poison included in Part I. of the list shall be sold by retail to any person unknown to the seller, unless introduced by some person known to the seller; and on every sale of any such article the seller shall, before delivery, make or cause to be made an entry in a book, to be kept for that purpose, of (1) the date of sale; (2) the name and address of purchaser; (3) the name and quantity of the article sold; and (4) the purpose for which it is stated to be required; to which the signature, chop, or mark of the purchaser, and of the person, if any, who introduced him, shall be affixed. There are also special by-laws applying only to arsenic and its preparations, which declare that such may not be sold by retail, unless

the poison, if colourless, be mixed with soot or indigo, so as to colour it; the person to whom the poison is sold or delivered be apparently not less than sixteen years of age; the occupation, as well as the name and address, of the purchaser be entered in the "poison-book." If the purchaser is unknown to the seller, he or she must bring a witness to the transaction, who shall also sign the "poison-book." In the case of persons who cannot write or speak English, the entries, labels, or signatures required may be made in the language with which such persons are acquainted, provided always that the word "Poison" appear upon the label in both English and Chinese characters. None of the foregoing by-laws applies to any article when forming part of the ingredients of any medicine dispensed by a chemist or druggist duly qualified under the British Pharmacy Act, 1868, or by any person who shall have previously proved to the satisfaction of the Governor that he possesses a similar qualification or has passed through a course of study and examination as thorough and sufficient as the minimum course of study and examination required for registration under the British Act. Any person at present in practice as a chemist and druggist who shall have previously proved to the satisfaction of the Governor that he is competent to dispense poisons may also be exempted, or a medical practitioner duly registered under the Medical Registration Ordinances in force in the Colony. In these cases if the medicine contain a poison included in either part of the list, the ingredients of the medicine, together with the name of the person to whom it is sold and delivered, must be entered, in a book kept for that purpose ("prescription-book"), and the name and address of the seller be attached to the medicine. It will be seen that our Far Eastern *confrères* are not grasping in their demands, and presumably the weed-killer problem is not now, or ever likely to be, theirs. It shows, however, that chemists in all our Colonies are awake to the value of their rights.

Drug-trade Development.

The address which Mr. Idris gave before the British Pharmaceutical Conference is criticised in the current number of the "British Medical Journal." That journal, in lamenting that Mr. Idris has reverted to the question of medical men dispensing, gives the opinion that the interests of medical men, chemists, and the public are best served by each profession raising its own standards. The question of "What will become of the chemist?" is thus discussed from a medical point of view:

The precise nature of the future relations between medical men and pharmacists still rests in the lap of the gods, and it is not easy to forecast them. Therapeutics are more than ever in the hot pot, and the something less than three hundred years which have elapsed since any differentiation was first established between medicine and pharmacy have seen an enormous number of changes. At that time came into being the apothecaries, who afterwards developed into general practitioners. Less than a century ago came the chemists and druggists, and into what these will develop remains to be seen. Some of us are old enough to remember what they were thirty, forty, and fifty years ago, and some of us may fortunately be young enough to see what they will be fifty years hence, while not forgetting what they are now. Notwithstanding the fact that chemists of to-day are, as a body, much more highly educated than their predecessors, the tendency seems to be to throw all real pharmaceutical work into the hands of a few great firms, and so convert the rest either into simple dispensers or into mere vendors of ready-made medicines and of those thousand and one toilet and other preparations with which the modern drug-shop is stocked. This development is probably as inevitable as to many it may seem undesirable. The influence of serumtherapy, electro-therapeutics, and other modern forms of treatment has still, however, to make itself felt, and though it does not sound very probable, it may very well be that fifty years hence the public will have ceased to love to dose itself with drugs and tho

methods of orthodox therapy may have so entirely changed that the chemist of the day will be a very different person from what he is now.

The "Lancet" temperately reviews Mr. Idris's address; but when approaching the question of dispensing by medical men, has "heard of counter-prescribing," and thinks things must be as they are until the public come to recognise that medical fees are due for expert advice and not for something in a bottle:

In many districts there is not a large enough population to support a duly qualified pharmaceutical chemist as well as a medical man, and it would be impossible, as far as we can see, to devise legislation which should prohibit a medical man from dispensing in a district where a pharmaceutical chemist was available, while allowing him to do so in the contrary case. Mr. Idris points out that pharmaceutical chemists have no wish to usurp the functions of the medical man, and this is no doubt true of the best of them, but we have heard of counter-prescribing. The preventing of pharmaceutical chemists from prescribing seems to us as difficult by law as the preventing of medical men from dispensing. So long as any person is allowed to practise medicine provided that he does not imply that he is a registered medical man, it must be unfair to impose particular disabilities upon a class which, though uneducated in medicine, yet knows something of practical therapeutics. And so long as the community cannot pay both the medical man and the dispensing chemist, the medical man will have to discharge the double duty.

Counter Indiscretion.

That inveterate scare-monger, the London "Daily Mail," published a letter last week from "Dorothea Sharpe," of Bayswater, which bears on the face of it all the elements of an improbable incident. The lady states that the servant of some friends of hers took a prescription to be made up for her master by a respectable West-end chemist. The dispenser was talkative. He ran over the contents of the prescription out loud, and remarked sympathetically that he was sorry to observe from the fact that it contained digitalis that the patient's heart was affected. The servant replied that she did not know anything about that. "Oh, I see," he answered significantly—"something else?" Digitalis is, the writer understands and she says so, sometimes given for alcoholism; "though the chemist's charitable assumption was wide of the mark, it will add a new horror to life if our chemists are to discuss our prescriptions with our servants and saddle us with fictitious ailments." Although we are not prepared to deny that there may be indiscreet assistants, even in the drug trade, this story which the lady correspondent got from her friends, who got it from a servant, will require more than the publicity of the "Daily Mail" to authenticate it. A reply from "Liverpool" in a subsequent issue is to the effect that "if such a conversation did take place" the man who was guilty of the comments on the prescription was totally unfitted for the position he occupied, and would be scouted by any sane chemist. And so say all of us.

Medical Advertising.

There has been some discussion as to whether medical men should send their patients to laymen for treatment by electricity. It was pointed out by Mr. Valentine Knaggs that many men taking up electro-therapeutics will, when fully qualified, refuse to register for the reason that if unregistered they will be assured of the support of their registered friends, and can at the same time compete on an equal footing with the lay institutes in the matter of advertising. The mention of the word "advertising" has brought consternation to at least one well-known member of the medical profession, who writes as follows:

Mr. H. Valentine Knaggs's letter contains a somewhat alluring but dangerous suggestion. It is that medical practitioners who practise electro-therapeutics should advertise to obtain the support of some medical men and also to act as a foil to the numerous electrical quacks. This would entail de-registration. Does Mr. Knaggs seriously consider what this means to a duly registered medical practitioner? Would he give the same advice to

the dermatologist, surgeon aurist, surgeon oculist, and laryngologist, or any other of our special practitioners? I venture to think, Sirs, that should we attempt to follow Mr. Knaggs's advice he would probably be the first to cast at us a stone.

We are aware that to mention the word "advertise" to medical ears is an unpardonable offence, but if people who possess special aptitude for performing particular duties do not let it be known the public lose the benefit of an expert's services, and the expert, from want of practice, becomes fossilised. The attitude of the medical profession towards advertising is probably the reason why so many quacks exist. This side of the question should not be lost sight of when the new Medical Bill is introduced with the famous clause that is to stop anyone but a registered medical man from applying "any medical or dental treatment to any persons without the supervision of a registered medical or dental practitioner" and "demands or receives any valuable consideration for such treatment whether by way of remuneration, gratuity, or otherwise."

Cape Botany.

The report of Dr. MacOwan, F.L.S., Government botanist and curator of the Government Herbarium at Cape Town, for 1903, states, among other things, that the plan of assisting high schools and colleges in the Colony which are giving special attention to botanical teaching has been continued during the year. Collections of named plants, comprising 1,571 species, have been made over to eight schools, to found school herbariums. The plants have been selected to cover as many genera as possible, but *Helichrysum* and *Erica* have been made exceptions, as these are used to illustrate the astonishing wealth of forms which the Cape sometimes groups under a single genus. Therefore one collection has twenty species of *Erica* and thirty-seven of *Helichrysum*. Specimens have been exchanged with foreign botanical establishments, and the representative collection has been made more valuable thereby. Visits have been made to the Colony on behalf of the United States Department of Agriculture, to endeavour to find plants suitable for acclimatisation in the warmer and more arid States and Territories, and several plants have been taken for trial. The number of teachers who have visited the herbarium, either to get specimens identified, to examine the larger text-books and works of reference, or to get hints on method in botanical teaching, has been unusually large. Among the "identifications" that took place during the year was the recognition of "Alsem." *Artemisia afra*, Jacq., the Cape wormwood, employed by the Malays to make a somewhat stupefying bitter drink, in humble imitation, perhaps, of absinthe. Truly a report of useful, peaceful, and unostentatious work.

Adulterated Cream of Tartar.

By E. J. MILLARD, F.C.S.

REFERENCE has been made in THE CHEMIST & DRUGGIST to the presence of wheat starch in cream of tartar, and a sample of cream of tartar has quite recently been submitted to me which is so grossly adulterated that I think attention should at once be drawn to it. The sample was not perfectly soluble in water even when heated, and was found to contain a considerable proportion of maize starch, readily recognisable by the usual tests. One gram required only 4.1 c.c. of the volumetric solution of caustic soda for neutralisation, and a corresponding reduction occurred in the quantity of acid required to neutralise the soluble ash. A minute quantity with a drop of iodine-water on a glass slide showed the starch grains very distinctly under the microscope.

Legal Reports.

Trade Law.

Personal Responsibility when Forming a Company. Lord Justice Vaughan Williams, in a judgment recently delivered by the Court of Appeal, has laid down an important principle which affects directors and company-promoters very seriously. It amounts to this—that when any persons concerned in forming a company employ a solicitor to draw up their prospectus, they must make it their business to see that all "material" contracts are set forth in the prospectus. If they do not see to this, or if the solicitor in error advises them that a contract is not material and it is subsequently shown that it is, they themselves will be responsible, and will be held liable as having "knowingly issued" a misleading prospectus, and may be sued subsequently by a shareholder who took shares in the company on the faith of the prospectus. The case in point was one of several which were re-cloves of Whitaker-Wright and his companies, and although this particular case is to be carried on to the House of Lords, there is little doubt that the principle laid down in the High Court, and now affirmed by the Court of Appeal, will remain fully established.

Ownership of Samples Lent for Exhibition.—The Court of Appeal has given an important decision as to the right of a trustee in bankruptcy to claim for purposes of realisation goods deposited with a bankrupt as samples to be shown to customers. It was an appeal from a decision of the late Mr. Justice Wright, who decided that the articles in question formed part of the property of the bankrupt as being—within the meaning of Section 44 of the Bankruptcy Act, 1883—"at the commencement of the bankruptcy in the possession, order, or disposition of the bankrupts in their trade or business, by the consent and permission of the true owners, under such circumstances that they are the reputed owners thereof." The owners now applied for a declaration that the goods in question were their property, that the trustee had no right or title to them, and that he be ordered to deliver them up or pay the value. Lord Justice Vaughan Williams, in delivering the judgment of the Court, said that notwithstanding the fact that the bankrupt occasionally sold the samples without any objection on the owners' part, yet the samples were so generally dealt with by the bankrupt that it must have occurred to the mind of the customers that they were not being dealt with in the way in which the seller dealt with his own goods. There was also a clear suggestion of agency, and the Court did not think it was a case in which the true owners of the goods had acquiesced in the bankrupt so dealing with the goods as to hold himself out as the owner, or induce customers to presume such ownership. The appeal was therefore allowed, with costs.

Ordering Tin Boxes.—An action was tried by the Lord Chief Justice, at Birmingham Assizes last week, in which an important point arose with regard to the ordering of tin boxes from samples supplied by a firm of makers. The plaintiffs were the County Chemical Company, and the defendant was a factor named Frankenburger, and the plaintiffs sought an injunction to restrain defendant from selling goods in tin boxes said to resemble those sold by the company so closely as to mislead the public. Damages and delivery up were also asked. In the course of the evidence it was admitted by defendant that he obtained samples of tin boxes from the German firm who supplied the plaintiffs, and out of these samples he chose two—one for colour and the other for "design"—the latter being the "Chemico" box of the plaintiffs. He gave instructions for the word "Triumph" to be substituted for "Chemico" and certain other minor alterations. The plaintiffs' manager stated that their "Chemico" box of indiarubber solution for bicycles was sold at 36s. per gross, while defendant sold his preparation at 22s. per gross, although both boxes were similar in size. The witness also alleged that defendant's goods were very inferior in quality. The Judge decided in favour of the plaintiffs, and granted the injunction asked for, with 40s. damages and costs—remarking that, in the absence of any evidence to guide him in deciding as to the amount of loss plaintiffs had suffered, he (the learned Judge) considered it a case for nominal damages only.

Copper in Peas.—At Bow Street Police Court on Monday August 15, before Mr. Marsham, a wholesale provision-dealer was summoned by the Holborn Borough Council for selling preserved peas and beans containing sulphate of copper, rendering them injurious to health. It was stated for the prosecution that the proportion of sulphate of copper was 3.402 grains per lb. in the peas and 4.067 grains per lb. in the beans. Dr. A. D. Cockburn, medical officer of health for the borough of Holborn, deposed to the injurious effect that sulphate of copper would have upon the human system. In the

course of his evidence he said that it has been confirmed that when sulphate of copper exists in peas in very small quantities it combines with the green colouring-matter of the peas and forms phyllocyanate of copper. In small quantities this is not injurious, but where the sulphate of copper is present in larger quantities, as in the case under consideration, it enters into combination with the pith or substance of the peas when taken in conjunction with fats, such as butter, and a highly dangerous substance—leguminate of copper—is formed, which does not pass out of the system. In cross-examination witness said sulphate of copper was administered medicinally as a tonic, and he had never known any ill effects arising from the eating of preserved peas. Mr. Ricketts, sen., for the defence, said that it seemed somewhat extraordinary that 2 grains of sulphate of copper given daily as a tonic should be beneficial, but 1 grain in $\frac{1}{4}$ lb. of preserved peas taken occasionally should be harmful. It had not been proved, he said, that the sulphate of copper was injurious to health, and that was certainly the view of the Legislature, because they had not taken any steps in the direction suggested by the Departmental Committee in 1899. Apart from that, however, he held that Section 20 of the Sale of Food and Drugs Act stated that proceedings could be taken only when the analyst had given a perfect certificate. In the case under consideration the analyst had only stated the proportions of the ingredients, and had not said that the amounts were injurious to health. Mr. Marsham held that the case had been proved, and fined the defendant 40s. and 2s. costs for selling the peas, and 20s. and 2s. costs for selling the beans. On the request of Mr. Ricketts, he agreed to state a case.

High Court Cases.

THE SACCHARINE PATENTS.

In the Bill Chamber of the Court of Session on August 24, Lord Kyllachy heard counsel in a note presented by the Saccharine Corporation (Limited), 165 Queen Victoria Street, London, against Ross Brothers & Co., manufacturing chemists, Sunbury Place, Belford Road, Edinburgh. The complainers sought to have the respondents interdicted from infringing seven patents belonging to them. They complained that they had recently discovered that the respondents had been infringing these patents, and that in particular there was imported by them on May 12 1 lb. of sweetening-compound made in infringement of the letters-patent. The respondents, in answer, admitted that they had received 1 lb. of the compound referred to from a foreign producer; but they explained that they received a circular from Ant. Darnet, 97 Chemin des Pins, Lyons, France, offering to supply a substance called "special saccharin," which was widely advertised, and which was stated to be 750 times sweeter than cane-sugar. The purchase complained of was obtained by them for the purpose of analysing and testing it, and was made in good faith and in entire ignorance that by so doing they were infringing the complainers' patent rights. They stated that they had no intention of purchasing any more of the substance, and they pointed out that the complainers did not specify which of the seven patents had been infringed. In respect that the respondents stated they had no intention of purchasing any more of the compound, counsel for the complainer did not press for interdict, and Lord Kyllachy passed the note for the trial of the action.

Pharmacy Act 1868.

NICOTINE PREPARATIONS.

At King's Lynn on August 18, before Judge Willis, K.C., the Council of the Pharmaceutical Society of Great Britain, by Richard Bremridge, the registrar, sued C. Townsend, seedsman, Lynn, for 5*l.*, penalty for keeping open shop for the retailing, dispensing, or compounding of nicotine, a poisonous vegetable-alkaloid, contained in and forming part of the ingredients of a compound known as "XL All" vapourising fumigator. Similar charges were made against Mr. J. H. Martin and Messrs. R. & A. Taylor, all seedsmen and florists, of Lynn.

Mr. T. G. Dobbs said he appeared for all three defendants, and as the defence was a technical one it would apply to the whole three cases. He admitted that defendants were not registered chemists and druggists, and also that these respective articles claimed by the plaintiffs to be poison did contain nicotine. The defendants had been permitted to sell the articles for twelve years without

question, and it would be his endeavour to show his Honour that they were of great use in horticulture, and to get him to say that these things were not poisonous drugs.

Judge Willis: If you can show me authority that this is not a poisonous drug, there is an end to the case.

Mr. Dobbs: I have no authority to go upon, as this is the first case of this kind that has been brought and properly defended, for in the cases that have been decided an admittedly poisonous drug entered into the compound, such as chlorodyne. But these articles are not for medicinal purposes; they are for destroying insects on plants and vines, and this may also apply to weed-killers and sheep-dips. It was not, he contended, the intention of the Act to apply the word "poison" to such compounds as these; it was intended to apply, he submitted, to poisons in their crude form.

Judge Willis: You mean to say that anyone could sell poisons that are contained in compounds? That, I consider, would be a very dangerous thing.

George Henry Steer deposed that, acting under instructions from the Society, he purchased a bottle of "XL All" vapourising fumigator from Mr. Townsend's shop. On the same day he went to Mr. Martin's, and after buying a packet of "Summer Cloud," a powder used to preserve flowers, he asked for a bottle of "XL All" vapourising fumigator. The assistant said, "We are not allowed to sell it, as it is a poison, and it would be against the Pharmacy Act." Witness happened to see a bottle labelled "Nicotine," and he purchased it. Several other packets of "Nicotine" were exposed for sale. He paid 10d. for it and got a receipt. After leaving Martin's he proceeded to R. & A. Taylor's, and was there supplied with "XL All" fumigator without questions. Similar packages were exposed for sale.

Cross-examined: He did not go to a chemist's shop before making his purchases to get any complaint as to the selling of it. He did not see any of the "XL All" fumigator in the window at Taylor's, and there was nothing on the window to show that they were holding themselves open to sell this article, and the same thing applied to the other defendants. These articles (according to the labels on the bottles) were used exclusively for removing insects from plants.

Mr. Harry Moon put in the written authority of the Council authorising the proceedings to be taken, and deposed to receiving the bottles from Mr. Steer and handing them to Mr. Tickle, the analyst. The defendants were not on the Pharmaceutical Register.

Cross-examined, Mr. Moon said he had no knowledge of any correspondence between the Pharmaceutical Society and the Privy Council with reference to the sale of poison for horticultural purposes.

Mr. Dobbs: These prosecutions are brought in the interest of chemists and druggists solely?—No; they are brought for the safety of the public.

Mr. Thomas Tickle, public analyst for Exeter, deposed to analysing the contents of the three bottles, for the purpose of ascertaining and estimating the presence of nicotine. In each case there was 40 per cent. of nicotine in the fluid. The nicotine found in the bottles was a poison, and one grain might be fatal, and 3 grains would certainly be fatal. There were 215 grains in Townsend's, 173 in Taylor's, and 170 in Martin's.

Mr. Dobbs, in defence, contended that the "XL All" fumigator and the "Nicotine" were not poisons within the meaning of Section 15 of the Pharmacy Act. He also contended that the shops were not open for the sale of poison within the meaning of the Act, that section being intended to prevent quacks from selling poison. It was never intended that these articles, not used in cases of disease or for the improvement of health, but in horticultural operations, should be included in the word "poison." If judgment went against defendants, his Honour would be saying that only chemists and druggists could sell tobacco, which contained nicotine just as the "XL All" fumigator and "Nicotine" did, arsenical paints and soaps, and such-like compounds. It was a serious matter, as such a judgment would apply to the sale of weed-killers and sheep-dips, which were sold in bulk by seedsmen, and which farmers in some districts could not obtain from chemists.

Judge Willis held that the Act was intended to prevent all

but qualified chemists and druggists from selling such deadly compounds as the "XL All" fumigator and "Nicotine," had been proved to be, and he gave judgment for the plaintiff Society with costs on the higher scale.

Leave to appeal was granted.

On Thursday, at the Southwark Police Court, before Mr. Paul Taylor, G. H. Richards, wholesale horticultural sundriesman, Southwark Street, was prosecuted by the Pharmaceutical Society under Section 17 of the Pharmacy Act for having sold (wholesale) a bottle of "XL" insecticide containing nicotine, not labelled with the word "Poison."

Before the case for the prosecution was stated,

Mr. Dobbs, who appeared for the defendant, asked for an adjournment, on the ground that in a case of the same character lately heard before the Lord Mayor a case for the High Court had been applied for. The question was whether this poison came within the meaning of the Pharmacy Act.

Mr. Vaughan Williams (for the prosecution) objected. The point mentioned by Mr. Dobbs was only one of seven on which the case was asked for, and some of the seven could not apply to this case. For example, one of the grounds was that three penalties had been imposed. In this case they only asked for one penalty. This insecticide was an extremely dangerous poison. The bottle sold contained sufficient to kill from 75 to 150 persons, and from beginning to end of the label there was not a word to suggest it was a poison. It was an extremely bad case. This gentleman advertised himself as the greatest manufacturer of insecticides in the world. It was the first time they had been able to get at the manufacturer. It was hardly possible that the manufacturer did not know how poisonous it was. In 1899 a person had been convicted at the Mansion House.

Mr. Dobbs: That was not the same article.

Mr. Vaughan Williams said it was "XL All" fumigator, and this was "XL All" insecticide, but it contained the same poison. He must press for a severe penalty.

The Magistrate said it was perfectly obvious that it ought to be labelled "poison," and he could not understand any chemist omitting to so label it.

Mr. Dobbs said they had decided to so label it since the Lord Mayor's decision, and therefore he would plead guilty; they had always labelled the fumigator "poison," but this contained a much smaller percentage of the poison, and there had only been one accident with it during the past twelve years. Mr. Dobbs was proceeding to discuss the application of the Pharmacy Act to such poisons, when

The Clerk asked him if he pleaded guilty subject to the decision of the High Court.

Mr. Dobbs said he would plead guilty without reservation. He mentioned that he had written to the Pharmaceutical Society to suggest that, as these cases were a great expense to the Society, they might withdraw his case in view of the defendant's undertaking to label the article "poison" in future.

The Magistrate said he could not regard this as a merely technical offence. He would fine the defendant 5*l.* and allow 2 guineas expenses.

Mr. Vaughan Williams said the Society had been put to great expense. Mr. Dobbs had not offered to plead guilty, consequently they had been obliged to bring an analyst and a doctor to the Court.

The Magistrate then said he would impose a fine of 5*l.* with 5 guineas costs.

County Court Cases.

A MIXED TRANSACTION.

At Skipton County Court on August 17, before Judge Pompas, K.C., Messrs. Brook, Parker & Co. (Limited), wholesale druggists, sued William Henry Gregg, druggist, of Moor Lane, Clitheroe, formerly of Barnoldswick, for 7*l.* 15*s.* 9*d.* for "goods had and received." It was stated for the plaintiffs that Mr. Gregg carried on business for some time as a chemist in Barnoldswick. He was not a registered chemist, and wanted to dispose of his business to a Mr. Chadwick. The latter eventually went to see what kind of a business it was, and the arrangement between

Gregg and Chadwick seemed to be that the latter should be in Gregg's employ for a few weeks to see how the business went on, and that he should receive 21s. per week. During the period a representative of the plaintiff's called at the shop and saw both Gregg and Chadwick, and took an order from the latter. In due course the agent of the railway company went to Chadwick's place to deliver the goods, but Chadwick was not there. Mr. Gregg, however, was there and he received the goods, signed Chadwick's name, and put his own initials underneath. Chadwick, it appeared, had left the premises some days before. Gregg received the goods, had used them for his own purposes, and that was why they were suing Gregg. Chadwick had given Gregg no authority to receive the goods or to dispose of them, neither had he sold or dealt with them in any manner whatsoever.

In support of this statement evidence was given by the carrier who delivered the goods and by Mr. Chadwick. The latter said he was a registered chemist living at Blackburn. He saw Gregg's business advertised as a "chemist's shop in hands of very delicate old man for sale." That referred to Gregg (who is a young man). He went there as a servant at 17. a week. They partially agreed that he should act as a kind of manager with a view to purchase. He stayed there just over a fortnight, and he never saw the goods sent by the plaintiffs.

Mr. Walker (for the defendant) produced what he said was the duplicate of an agreement with reference to the purchase of the business, in which Chadwick agreed to purchase, and both Gregg's and Chadwick's signatures were attached to it, but Chadwick said it was agreed that that document should be destroyed. He denied that he gave Mr. Gregg an I.O.U. or a post-dated cheque for 100l., or that he afterwards told him that the cheque was worthless. He further denied that he had the original (stamped) agreement. Mr. Walker produced another (stamped) agreement in which Chadwick agreed to re-sell the business to Mrs. Gregg for 50l., and Chadwick suggested that Gregg said Orridge's, who advertised the sale of the business, wanted commission, and he (Gregg) had been advised by his lawyer that that was the best way of avoiding payment.

The defendant (Gregg) denied that Chadwick was in his employ; neither did he pay him any salary. He said the original of the alleged agreement of sale was taken by Chadwick. Chadwick came and saw the shop and stock, he said, and agreed to give him 100l. for it. He (witness) accepted an I.O.U. The agreement which had been produced was drawn up, and he denied that there was ever any arrangement that it should be destroyed. On that occasion the I.O.U. was exchanged for a post-dated cheque for 100l., Chadwick's excuse for post-dating the cheque being that he had not completed the sale of his shop at Blackburn and therefore could not pay the money then. Chadwick absolutely agreed to buy the shop, and was the owner when the goods were delivered, though he was not in at the time. When Chadwick decamped witness followed him up, and it was then that the agreement was drawn up with reference to the re-transfer of the business to Mrs. Gregg for 50l., the original agreement being that the business was to be sold for 100l., and 150l. if cash was not paid down. Chadwick admitted to him that he had told a falsehood about owning a shop at Blackburn, and the re-transfer of the business for 50l. was in consequence of the trouble he had caused him, and Chadwick also agreed to the stock at Barnoldswick being transferred to witness's Clitheroe shop. At Chadwick's request he agreed to stay with him a month to introduce him to customers and travellers. Mr. Chadwick had handbills printed and issued stating that he had taken over the business.

Judge Bompas said he believed Mr. Chadwick was "entirely and wholly unworthy of belief." His Honour commented on the fact that, notwithstanding the existence of two documents, both of which admittedly bore Chadwick's signature, Chadwick denied that there had been any agreement to sell the business. In his opinion Gregg had given his evidence in a most satisfactory manner, and Chadwick in a most unsatisfactory manner. He believed Chadwick to have committed wilful and intentional perjury, and he saw nothing against the credit of Gregg. He gave judgment for defendant with costs.

Sale of Food and Drugs Acts.

MAGNESIA.

At Berkhamstead Petty Sessions on August 17, Frederick Kingham, a shopkeeper, of Wiggington, was summoned for selling magnesia not of the nature and quality demanded. The evidence of Mr. W. G. Rushworth, Inspector under the Food and Drugs Acts, was to the effect that on July 1 he visited the defendant's shop at Wiggington, and saw a bottle containing something labelled "Magnesia." He asked for 4 ozs. of magnesia, which the defendant served. Witness sent a portion to the Public Analyst (Mr. A. E. Ekins), whose certificate showed that the sample was carbonate of magnesia. He did not think this was done for any purpose of fraud, but it was essential that these small people who sold drugs should know their responsibility. A fine of 6d. and 17s. 6d. costs was imposed.

New Companies & Company News.

G. B. OWEN (LIMITED).—Capital 2,000l., in 17. shares (500 preference). Objects: To acquire the business of a chemist and druggist carried on at 22 and 24 Dixon Lane, and 12 to 16 Mary Street, Sheffield, formerly carried on by G. B. Owen (now deceased), and lately carried on by his executrix, Mrs. R. Owen; to adopt an agreement with the said Mrs. R. Owen: to carry on the business of chemists, druggists, chemical manufacturers, drysalts, opticians, manufacturers of and dealers in salts, acids, alkalis, drugs, medicines, pharmaceutical, chemical, and surgical appliances, patent or proprietary articles, photographic materials, scientific, surgical, and optical instruments, etc., and to employ qualified persons to act on the company's behalf as chemists, dentists, or opticians, etc. The first subscribers are: Mrs. R. Owen, 51 Crescent Road, Sheffield; W. J. Owen, 62 Norfolk Road, Sheffield, pawnbroker; W. Dust, 23 Change Alley, Sheffield, solicitor; J. Shaw, 20 Collegiate Crescent, Sheffield, wire-rope manufacturer; F. G. Boadbury, 51 Crescent Road, Sheffield, chemist; Miss E. Owen, 51 Crescent Road, Sheffield; and A. E. C. Ludlaw, 23 Change Alley, Sheffield, solicitor. No initial public issue. The first directors are T. Marshland, J. Shaw, and W. J. Owen. Qualification, 25l.; remuneration as fixed by the company. Registered office, 24 Dixon Lane, Sheffield.

FREEMAN'S CHLORODYNE (LIMITED).—Capital 6,000l., in 17. shares. Objects: To adopt an agreement with Wilhelmina Freeman, Eliza J. Freeman, and W. F. Freeman for the acquisition of the business formerly carried on by R. Freeman, and now by the said vendors, at 70 Kennington Park Road, S.E., in particular to acquire the recipes and full information relating to and the right to manufacture and deal in a certain medicinal preparation known as "Freeman's Chlorodyne," and to carry on the business of manufacturers and vendors of chlorodyne and other medicines and preparations, chemists, drysalts, importers, and manufacturers of and dealers in pharmaceutical and medicinal preparations, &c. The first subscribers are: W. T. James, 69 Griffiths Road, Wimbledon, chemist; J. D. Deacon, 6 Old Jewry, E.C., solicitor; J. F. Duncan, 6 Old Jewry, E.C., solicitor; H. H. Simmins, 41 Rutland Park Mansions, Willesden Green, N.W., accountant; A. Champion, 36 Lucas Road, St. John's Road, Penge, S.E., clerk; S. Pennells, 71 Margravine Gardens, West Kensington, clerk; and G. A. Duncan, 1 Avenue Mansions, Willesden Green, N.W., clerk. No initial public issue. The first directors are Wilhelmina Freeman (managing director), Eliza J. Freeman, and W. F. Freeman (all permanent). Qualification of Wilhelmina Freeman, 250 shares; of W. F. Freeman, 1,550 shares; of Eliza J. Freeman, 750 shares; of other directors, 500 shares. Remuneration 50l. each per annum (managing director, 100l. extra). Registered office, 70 Kennington Park Road, S.E.

BOOTS' DIVIDENDS.—The fiftieth quarterly dividend on the shares of Boots Cash Chemists (Eastern) (Limited), and also the quarterly dividends on the 6 per cent. preference shares in Boots Cash Chemists (Southern) (Limited), Boots Cash Chemists (Western) (Limited), Boots Cash Chemists (Lancashire) (Limited), and Boots Pure Drug Company (Limited) will be paid on August 30. The transfer books will be closed from September 1 to 3, inclusive.

AMALGAMATION RUMOUR.—A Zurich correspondent of the "Frankfurter Zeitung" reports that an advance of 16 per cent. in the quotations on the local Bourse for the shares of the Anglo-Swiss Condensed Milk Company of Cham has taken place in the course of a few days on the strength of rumours that the company is again negotiating with Nestlé's Company, of Vevey, with a view to amalgamating the two undertakings.

Trade Notes.

TOTAL WINDOW-DISPLAYS.—Messrs. Burgoyne, Burbidges & Co., 16 Coleman Street, E.C., are making a special offer in our advertisement columns regarding window-displays of Zotal.

DR. STHAMER'S SAPONINE is now obtainable from Messrs. McDiarmid & Co., 248 Latrobe Street, Melbourne, that firm having been appointed sole distributing-agent for Australasia.

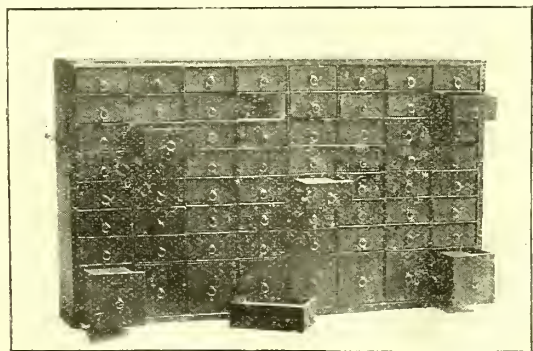
P.A.T.A. ADDITIONS.—The additions to the P.A.T.A. protected list during August include Armour's toilet-soaps, Dako's liniment, Eldon photographic developers, Jewsbury & Brown's tooth-paste in tubes, Johnson's digestive-tablets, King's liver pills, and Nocrize.

TABLOID LITHIUM AND UROTROPINE.—A combination of 5 grains of lithium citrate with 3 grains of urotropine and an effervescent basis is a form of tabloid which Messrs Burroughs Wellcome & Co. have introduced. These tabloids are of the size of a halfpenny but $\frac{1}{2}$ inch thick, and when one is placed in water brisk effervescence ensues.

MESSRS. HOUGHTONS (LIMITED), 88 and 89 High Holborn, W.C., are putting up the Imperial Plate Company's pyro-soda and pyro-metol developers in powder form. The ingredients are placed in canisters, each package being sufficient for 40 ozs. of developer. The tins are the familiar lever-top variety, and the contents are hence likely to keep well. The canisters sell at 1s. 3d. each. The company are taking time by the forelock, and sending round to dealers a reminder that a book of samples of Christmas greeting-cards is ready. These cards are known as the "Grosvenor," and the sample-books contain thirty-six specimens. The firm are in future to be represented in Australasia and South Africa. The address of Mr. H. V. Lawes, the Australasian representative, is P.O. Box 748,

Sydney, N.S.W., and of Mr. J. E. Wheeler, the agent in South Africa, 71 Arnold Street, Observatory, Cape Town.

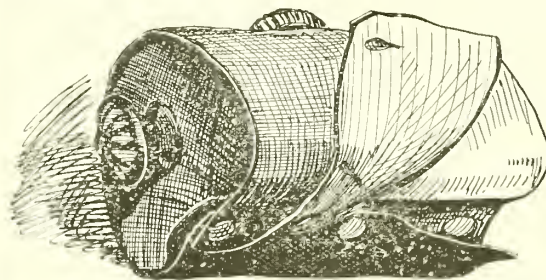
A LABEL-CABINET.—Mr. John Shelley, representing Messrs. James Townsend & Son, label printers, Exeter and London, has just brought out a new label-cabinet designed to assist chemists in keeping their stocks of labels. The size of the cabinet is 27 inches by 15 $\frac{1}{2}$ inches by 4 $\frac{1}{2}$, and it contains fifty-six drawers 4 $\frac{1}{2}$ inches by 3 inches by 1 $\frac{1}{2}$ and eight drawers 4 $\frac{1}{2}$ inches by 3 inches by 3 $\frac{1}{2}$. The



smaller drawers will hold 1,500 slips. The whole thing is encased in a $\frac{1}{2}$ -inch wood enclosure; the drawers are made of cardboard, cloth lined, and with thin wood to support the front. The cabinet, which Mr. Shelley tells us is designed to last for twenty years, sells at 21s. and should

soon save its cost in avoidance of worry and duplication of orders.

THE KOZY FOOT-WARMER.—The New Lines Introduction Company, 44 Adelaide Road, West Ealing, W., send us a sample of the Kozy foot-warmer for which they are the wholesale agents. The foot-warmer is of earthenware, but differs from the usual pattern in that the bottom is concave



and has moulded in the concavity a series of studs upon which a neat felt cover buttons. The studs are not liable to get broken in use or in packing, owing to their protected position. The illustration shows the novel feature of this foot-warmer. We are asked to state that a sample will be sent to any of our subscribers who sends the company a postal order for 1s., when further particulars will also be supplied.

Business Changes.

Properly authenticated business notices (not being advertisements) are inserted in this section free of charge if promptly communicated to the Editor

THE Pavement Pharmacy has been re-opened at 27 Turnpike Lane, Hornsey, N.

MR. J. JAMES, chemist and druggist, has relinquished the business at 551 High Road, Tottenham, N.

MR. J. M. REES, chemist and druggist, late of Southend, has opened a business at Southgate Street, Bath.

MR. H. LYON, chemist and druggist, 343 Upper Street, Islington, N., has sold his business to Mr. Armstrong.

MR. W. H. BROWN, chemist and druggist, has purchased the business of the late Mr. H. B. Tigar, chemist and druggist, at Freemantle, Southampton.

THE PARTNERSHIP between Messrs. Ludford & Prosser, glass-bottle manufacturers, 46A Brooksby Walk, Homerton, N.E., has been dissolved, Mr. W. W. Prosser being no longer connected with the firm. The business will in future be carried on by Mr. Ludford under the style of Ludford & Co.

Gazette.

Partnership Dissolved.

Wilson, J., and **Hartopp, E. H.**, under the style of James Cox, Bethnal Green Road, N.E., mineral and aerated water manufacturers.

Johnson, A. A., and **Hunt, T. M. C.**, under the style of Johnson & Hunt, Twickenham, veterinary surgeons.

Williams, D. E., and **Bryant, E. J.**, under the style of the Portmadoc Mineral-water Company, Portmadoc, Carnarvonshire, mineral-water manufacturers.

The Bankruptcy Acts, 1883 and 1890.

ADJUDICATION.

Cooke, Vernon Russell de Landre, Bradford, medical practitioner.

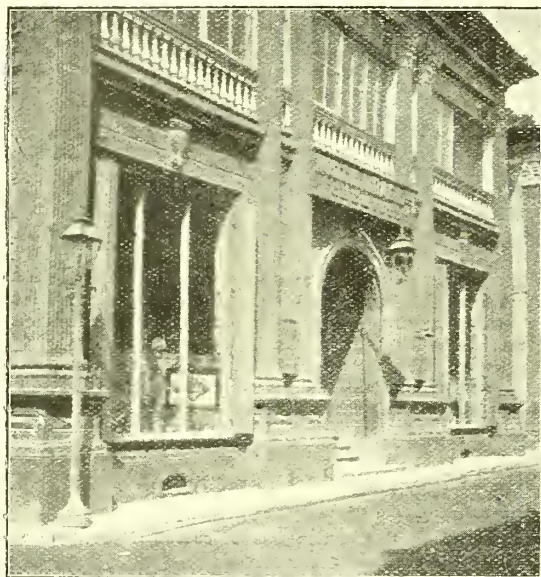
ORDER MADE ON APPLICATION FOR DISCHARGE.

Park, James, Lime Street, E.C., New York, and Kingston, Jamaica, West India merchant, carrying on business in co-partnership with William Charles Cunningham Park and James John Macfadyen, at 24 Lime Street aforesaid, as Park, Macfadyen & Co., and at 69 Wall Street, New York, as Park, Son & Co., and at Kingston, Jamaica, as Turnbull & Co.: discharge granted.

In Yokohama.

(FIRST IMPRESSIONS OF AN ENGLISH ASSISTANT.)

ENGLISH pharmacy in Yokohama is so very similar to pharmacy in many of the better-class businesses at home that it seems difficult to find anything particularly novel to write about. There are three European phar-



NORTH AND RAE'S PHARMACY—EXTERIOR.

macies in Yokohama—North & Rae's, Brett's (both British firms), and Schedel's, a German house. We give two illustrations of Messrs. North & Rae's pharmacy in Main



NORTH AND RAE'S PHARMACY—PART OF INTERIOR.

Street, Yokohama—the exterior and a corner of the interior. The interior is adapted for business purposes solely, the proprietors having apparently not taken the difficulties to be encountered by a probable photographer into considera-

tion. There are so many cases that it must be photographed in sections, and as we have no space for more than two illustrations we select the most characteristic. The business was established in 1865, when foreigners were required to confine themselves to only a small portion of Yokohama, and the other treaty ports were not open to foreigners. The premises were originally used as a bank and are very commodious, all the rooms being very lofty. The strong room still exists and makes a valuable storage room for fats and ointments, being quite cool on even the hottest day. Business is conducted in much the same way as at home, the daily work being divided into the dispensing of prescriptions and the retailing of the many things that go to make up a chemist's business. The analysis of water is occasionally undertaken, and sometimes articles which have been landed from ships, damaged by sea-water or some other agent, are sent in by shipping firms to be reported upon as to the cause of damage. The retail prices obtained are extremely good when compared with home prices, and patents require not the fostering care of the P.A.T.A. to ensure their bearing a margin of profit. Fortunately the cheap (?) drug-stores (with the usual 2s. 6d. sponges marked down to 5s. 6d.) does not exist out here, and although nearly all the Japanese bazaars carry a large stock of fancy soaps and perfumery (upon which they seem content with a few "sen" profit), they are not patronised to any extent by the foreign residents.

DISPENSING BY DOCTORS

is unknown—possibly owing to the difficulty in "keeping stock"—for it takes approximately four months from the time an order leaves Yokohama for England until it is received in stock, and probably because prescribing alone is sufficiently profitable, and rest in a climate which for the

吐根浸(六)
格魯兒安母紐謨
安母尼亞苗香精
右每二時一食匙
(濕性氣管支加兒)

A JAPANESE PRESCRIPTION.

greater part of the year ranges between 75° and 90° has a marketable value higher than the dispensing of one's own medicines. The prescriptions met with have a more foreign character than those usually encountered in many of the pharmacies at home. In Yokohama the medical profession is represented by a German, a Frenchman, two or three Japanese (the latter generally being graduates of German universities), as well as some English and American doctors. All are more or less addicted to prescribing, and many are very fond of, the newer remedies, so much so that each day almost necessitates an addition to an already large stock. The European population of Yokohama at the last census was close upon 2,000, and it is with these almost

exclusively that business is done. Only the better class Japanese deal at European pharmacies, and then chiefly for soap and toilet-articles. The majority of Japanese deal at the native pharmacies, of which there are two or three in Yokohama, and wherein are sold many strange medicaments for the cure or relief of as many strange diseases. For ordinary cuts or bruises, which nearly all the Japanese seem to carry about on some exposed part of their anatomy, an ordinary piece of stamp paper appears to be the remedy.

THE HOURS OF BUSINESS

are far easier than at home. The pharmacies are opened from 8 A.M. to 7 P.M., but these hours are only taken by the person on duty, the actual working hours being from 9 A.M. to 5 P.M. and 1 o'clock on Saturdays. Duty has to be taken out here—as where has it not in the retail drug line?—and I am afraid necessitates more work than is usual at home, as the residents seem to leave consulting their medical men until the cool of the evening or during that delightful quietude which even out here is symbolical of the Sabbath. Pills, fortunately, are not very frequently prescribed, the insoluble powders as well as most pill ingredients being given in gelatin capsules. Owing to the humidity of the climate, practically all powders dispensed have first to be wrapped in waxed paper before folding in white demy, and pills, capsules, and such-like are sent out in bottles, a well-stoppered bottle for such purposes being made at a very reasonable price by the Japanese.

The Government issue the

PHARMACOPŒIA JAPONICA,

which constitutes the official standard for the native pharmacist, and which seems on comparison to be a copy—in Latin—of the Pharmacopœia Germanica. The Japanese prescription illustrated on the previous page will puzzle the most nimble of “At the Counter” experts.

The dirtier and heavier work in the pharmacies is generally done by Japanese employés, who all seem very intelligent and extremely capable of imbibing fresh ideas, whilst the errand boy compares very favourably with his English prototype. He is much cleaner at his work and much smarter on his errands—less time being “put in” gossiping with others of the genus and squatting on his basket “doing in” another chapter on the fearful escapades of “Tiger Tim the Texas Terror.” Owing to the present war—of which, by the way, we get but scant information here—and the diminution in the number of tourists to the country, business is much quieter than usual this summer.

The manufacture of aerated waters, for which there is a great demand, is carried on very largely by each of the three European firms, the retail prices for “minerals” being no higher than those obtained at home. Syphons of soda water, lemonade, etc., generally retail at about 2s. 6d. a dozen, whilst the bottled waters sell at 1s. 6d. a dozen. With a still vivid remembrance of many attempts at C. & D. Diary competitions I may conclude by stating that Odol, Pond's extract, Listerine, Papier poudrè, Guy's tonic and Collis Browne's chlorodyne are among the “patents” which have the largest sale.

(217/69.)

Recent Wills.

BAXTER.—The will of the late Mr. George John Baxter, of 7 York Terrace, Sidmouth, formerly managing clerk to Messrs. A. & G. Fischer, drug merchants, Fen Court, Fenchurch Street, E.C., who died on April 9, 1904, has been proved at the Principal Probate Registry, by Mrs. Emily Amelia Baxter, widow and sole executrix. The gross amount of the estate is 981l. 18s., and the net personalty 925l.

CRYER.—The will of the late Mr. Henry Cryer, chemist and druggist, of 566 Holloway Road, N., who died on March 27, has been proved at the Principal Probate Registry by his executors, Mr. John Cryer, 4 Well Street, Cripplegate, warehouseman, and Mr. Walter Cryer, of Haslemere, Woodside Park Road, North Finchley, merchants' manager, the brothers. The gross amount of the estate is 1,407l. 0s. 7d., and the net personalty 443l. 1s. 1d.

DAVY.—The gross amount of the estate left by Mr. Arthur Davy, of 181 Beckenham Road, Penge, who died on March 27, amounted to 1,667l. 3s. 9d., and the net personalty to 1,580l. 14s. 8d. He appointed his widow, Mrs. Margaret Davy, sole executrix.

Reviews.

Fire and Explosion Risks: A Handbook Dealing with the Detection, Investigation and Prevention of Dangers Arising from Fires and Explosions of Chemico-technical Substances and Establishments. By Dr. VON SCHWARTZ. Translated from the German by Charles T. C. Salter. 9¼×6½. Pp. 357. 16s. net. (Charles Griffin & Co., Exeter Street, W.C.)

The primary use of this book is to provide information for fire-insurance officials, fire-brigade officers, members of the legal profession, and factory owners and inspectors. Dr. Von Schwartz's idea has been to collect the scattered information respecting fire-prevention into one book, the chemical aspect of the matter being particularly prominent. Being addressed to those who have not had a chemical training, the language is simple. The divisions of the book deal with (1) fires and explosions of a general character; (2) dangers caused by sources of light and heat; (3) dangers caused by gases; (4) dangers in various establishments; (5) dangers of various industrial materials; (6) dangers caused by agricultural products; (7) dangers produced by fats, oils, resins, and waxes; (8) dangers from petroleum, mineral oils, tar, &c.; (9) dangers produced by alcohols, ethers, and other liquids; (10) dangers produced by metals, oxides, acids, or salts; (11) dangers caused by lightning, flashing materials, and Bengal lights. One chapter, which deals with pharmaceutical chemists' establishments and drug-stores, has much to say about the dangers of ethereal preparations, but in some particulars is much too general. For instance, the statement that “the much-advertised washes for the head and mouth are mostly alcoholic or ethereal solutions of antiseptic substances” may be true in Germany, but hardly applies to this country. “Bandages are frequently impregnated with solutions of celluloid in acetone” is another sentence to which we take exception, but it is fair to add that this chapter only occupies two pages of a book running to over 350 pages. There is much useful information in the book, it covers the whole range of the operations in industrial chemistry and shows that almost every process involves some risk of fire and explosion, against which it is desirable to guard.

The Soda-water Formulary: A Guide for the Modern Soda-water Dispenser and a Compilation of the Most Recent Reliable Formulas for Dispensing Hot and Cold Soda. Collected by E. G. EBERLE, Ph.G. 7½×5½. Pp. 231. Cloth, \$1; paper, 75c. (Texas Drug Company, Dallas, Texas.)

Now that the soda-water fountain has become an established institution in this country, a book such as this is often inquired for. The introductory chapter explains that the work is a compilation arranged by a chemist who can appreciate the difference between working and tentative formulas, but care has been taken to quote the exact words of the first published recipes, any suggested improvements being afterwards given. There are a good many paragraphs on practical methods in connection with the soda-fountain which do not fall under the heading of formulas, but these will yield many hints to the dispenser of soda-water either hot or cold. We look upon the book as particularly valuable for the various ideas it conveys in compounding formulas; many of the recipes would require modifying, we think, but to a chemist this need not be a difficult matter.

Landlord and Tenant. By LAWRENCE DUCKWORTH, Barrister-at-Law. 7×4. Pp. 175. Limp cloth 2s. (London: Effingham Wilson.)

THIS is the latest of Mr. Wilson's series of legal handbooks, and is an epitome of the English law affecting landlord and tenant. There are nineteen chapters, each dealing with a particular branch of the subject, and the work must have been a laborious one, for the questions are complicated and widespread. The latest decisions down to March, 1904, are incorporated, and there is an exhaustive and valuable index. The book is one that every householder, and particularly every house-owner, should have for reference.

A Model Hospital Pharmacy.

MOST pharmacists who visited the Paris Exhibition of 1900 will remember in the Pavilion of the French "Assistance Publique" (Public Relief Department) the large photograph that figured there of a model hospital pharmacy. This is the pharmacy of the Hôtel Dieu Hospital, at Marseilles, of which Professor Domergue has been the head pharmacist since 1885.



PROFESSOR DOMERGUE.

He is also one of the leading authorities in the South of France on pharmaceutical matters, as well as being an expert chemist, whose advice is widely sought. I was therefore glad to be able to profit by the Professor's invitation to visit the hospital pharmacy during a short stay I made at Marseilles recently.

The situation of the Hôtel Dieu Hospital is well above the town. It is an ancient building and of a rather curious aspect. The frontage is large and faces south, and there are two wings.

In the old days, the professor explained, anything seems good enough for pharmacy there, and it was originally relegated to a cellarlike apartment. But after eleven years of patient pushfulness, M. Domergue managed to get the claims of pharmacy properly recognised, and the present model pharmacy, designed by himself, and built under his personal supervision, is the result. "My staff," he said "consists of three house-pharmacists who dispense all the prescriptions, and four assistants whose duty it is, under my direct supervision to analyse anything in the form of drugs, chemicals, wine, water, and all alimentary substances used in the hospital. Special attention is given to the analysis of milk, both the morning and evening supplies being carefully controlled. All pharmaceutical preparations requiring special care are prepared in the laboratory, and these include vegetable extracts such as ergotine. "And your infusions, M. Domergue," I inquired, "which are in such demand in French hospitals?" "Oh, we prepare these daily, and a series of drawers containing the fresh herbs and roots forms, as you may see, an interesting feature of the upper part of the pharmacy." One cannot help noticing the regulation and good order that prevail, and the professor continued: "In all work of this kind 'care' must be our constant watchword. For instance, I am just now engaged in purifying the chloroform intended for administration in the hospital, because so many accidents have occurred that I will never let it be said that the chloroform used in this hospital is not pure." This is only one instance of the methods of work and control. As we passed, in our inspection of the pharmacy, an assistant engaged in the analysis of milk, M. Domergue remarked that he never loses sight of the importance of milk as an article of alimentation, and he insists on having sealed samples for analysis sent daily by the hospital steward. He added: "At the present time I have been named as a special expert by the legal authorities to control evidence given regarding the analysis of milk. In fact, every week a large number of samples are submitted to me from one source or another outside the hospital."

Each of the three house-pharmacists takes dispensing night duty in turn, and they have a *salle de garde*, or sitting-room, where they can receive visitors. The house-pharmacists are, as a rule, men of more than average capacity and they usually make their way in the world. Candidates for these posts must be between eighteen and forty years of age and of French nationality. Among other documents, such as birth and vaccination certificates, they must also produce one of "bonne vie," or certifying to good moral

standing, signed by the mayor of the locality from which they come. The aspirants must also have completed their three years "stage" or apprenticeship in one or more pharmacies. There are two examinations: the first, of an eliminating nature, consists of (a) Recognition of twenty plants and substances of natural history and ten pharmaceutical preparations; (b) two manipulations or pharmaceutical preparations. The second, or definitive test, comprises (a) An oral examination on galenic pharmacy and chemistry; (b) a written question on a subject of pharmacy, inorganic chemistry, and natural history. The appointment of hospital pharmacists is for three years, and the salary paid is: First year, 1,300f. (52l.); second year, 1,400f. (56l.); third year, 1,500f. (60l.). Food and lodging are only supplied when they are on night duty (*service de garde*). After a year's service they have the right to use the title "Ex-interne des hôpitaux," which is always availed of.

As we passed into the dispensary M. Domergue said: "Here we are in the pharmacy proper. As you see, the dispensers work at a horseshoe counter, and they are protected in every way from intrusion and distraction. One of my assistants accompanies the visiting physician on his daily rounds through the hospital each morning, and takes charge of the prescriptions, which are immediately put in hand for dispensing."

No "out-patients" are supplied from the hospital; they get their medicines from other dispensaries in turn.

Then we entered the head pharmacist's private office, which is adjacent to the dispensary, and he showed me collections of the leading pharmaceutical journals of the world, which he receives regularly, and pointed with satisfaction to his file of *THE CHEMIST AND DRUGGIST*. We chatted for some time about international pharmacy, and I learned that M. Domergue reads fluently English, German, and Italian, in addition, of course, to his native language, French.

Bankruptcies and Failures.

Re GEORGE EDWARD HEATON, 39 Robertson Street, Hastings, Sussex, Chemist and Druggist.—Application for this debtor's discharge from bankruptcy was made on August 22, at the Town Hall, Station Road, Hastings. Judge Scully granted the application, but suspended its operation for a period of two years.

Re PERSEVERANCE HOMES ASSURANCE COMPANY, Leeds.—The history of this company was the subject of inquiry in the Leeds Bankruptcy Court on August 24. By order of Judge Bompas the company is being compulsorily wound up and some of the directors were before the Court for examination. The late managing director had been arrested under a warrant from the Registrar, and came in charge of warders from Armley Gaol, but was released after his examination. The chairman of the company, Mr. John Ward, said he was a chemist's assistant without salary, and 21 years of age when he was appointed chairman. He received 150l. a year as the chairman of the company. The judge refused, in view of the special character of the case, to order that Ward's examination should be closed.

Re HAHN, VIVERS & Co., 6 Mincing Lane, E.C., Wax Importers.—The first meeting of the creditors of Julius Hahn, trading as above, was held on August 25 at the London Bankruptcy Court before Mr. H. E. Burgess, Assistant Receiver. The debtor states that the business was started in 1889 by himself and Mr. Vivers with a joint capital of 500l., a further 120l. being subsequently provided by Mr. Vivers. The latter's father agreed to advance them 10,000l. to enable them to do a big Russian export business, a large capital being needed to enable them to stand against the long credit usual in Russia. The agreement, however, was not carried into effect, and after eight months the partnership was dissolved. Since then he (debtor) has traded alone, but in the old style. He did fairly well up to three years ago, but has since made several bad debts and been put to heavy law-costs. The petitioning creditors' debt is in respect of a gamble in cotton. No accounts have been filed, but the liabilities are roughly estimated at 700l., and there are no assets. The failure is attributed to heavy losses in law-costs, bad trade, depreciation in values, want of capital, and loss of credit. In the absence of any offer the estate was left in the hands of the Official Receiver to be wound up in the ordinary course of bankruptcy.

Correspondence

TO CORRESPONDENTS.—Please write clearly and concisely on one side of the paper only. All communications should be accompanied by the names and addresses of the writers. If queries are submitted, each should be written on a separate piece of paper. We do not reply to queries by post, and can only answer on subjects of general interest.

The B.P.C. "Formulary" and the Probity of Pharmaceutical Research.

SIR.—The British Pharmaceutical Conference has sold its "Formulary." The results of philanthropic work have been exchanged for filthy lucre. The soundness of the transaction has been questioned. Legally it is probably beyond question. The majority of members of the Conference present at the annual meeting were in favour of the deal. The Council of the Pharmaceutical Society presumably is as much entitled to spend money in purchasing the "Formulary" as it is to pay for contributions to the "Journal." It may be, however, that few persons will contend that much credit belongs to either side in the transaction. The sum received will not yield an annual income to the Conference equivalent to the profit derived from the sale of the "Formulary," while the Society cannot be said to have got much of a bargain because it could have "lifted" the desirable items of the "Formulary" without any payment. Had the expenditure of seventy guineas secured the goodwill and co-operation of the members of the "Formulary" Committee, the return might have given promise of being adequate. After the injudicious speech of the gentleman who is supposed to be editing the "Compendium," it can, however, scarcely be expected that any of the Committee outside of those who are already associated with him in other directions will care to work under a chief of apparently uncertain "humour," in influencing the contents of the mysterious volume which will probably be all the more wonderful for being left to the production of the select Bloomsbury coterie for whose benefit apparently it is being engineered as a comfortable little job. It is becoming increasingly difficult to carry on any undertaking of a *pro bono publico* character without one or more of the workers having an axe to grind and persistently endeavouring to get it on the stone while the others are turning the handle. And in work such as the preparation of the B.P.C. "Formulary" and the "Pharmacopœia" there is always obvious evidence of this. Will anyone miss the "Formulary"? Did any medical practitioner ever buy a copy? If he got one presented to him, did he ever prescribe from it? Pharmacists bought it as a matter of sentiment and loyalty, and if they gave away half a dozen copies to their medical friends it is problematical if they got prescriptions for its preparations sufficient to give profit enough to cover the cost. The "Formulary" had its good points and it had its weak ones. A lot of good work was spent on it, and it was an excellent provider of material for the "Pharmacopœia" Committee to consider. The last edition, however, showed signs of exhaustion. The weak points were more in evidence in the shape of questionable imitations of proprietary preparations, and if rumour be any way near the truth, the unpublished work which passes to the donor of the seventy guineas is pretty full in this direction. It was a mistake at the outset for the Conference to countenance this line. The originator of a combination of sufficient merit to become popular ought to get the good of his labour, and it would probably be better for the reputation of others if they sold the original rather than begin to introduce imitations which always give rise to suspicion. There is no practice in business so dangerous as the handling of substitutes. It may do in quack-medicine circles, where it is a case of diamond cut diamond. In pure pharmacy it is bad form and leads to bad business. In the published "Formulary" there are recipes for a goodly number of proprietary preparations which have a local or wide reputation. There is no general usefulness in devising these imitations. If they be not generally prescribed, pharmacists in general practice do not derive any benefit.

Besides, one scarcely supposes that in this direction would lie suitable work for pharmacists of the sort of which the committee was composed. Such work should be left to individuals who have a leaning that way: they are said to be fairly numerous. Probably the few pharmacists who have a business in supplying preparations to medical men who do their own dispensing find that an imitative preparation with a semi-official recognition leads to business if the imitation be cheaper than the original. Hereabout there is opportunity for axe-grinding. The general good of pharmacy, however, must not be subserved to the interests of a few firms or individuals. Now that work for the "Pharmacopœia" has been distributed and substitution is regarded as low morality the reasons for the continuance of the "Formulary" have passed. It is well away. Had it lived longer it might have done more harm than good. Its decease was opportune—likewise the seventy guineas.

Yours faithfully,

PURIST. (224/91.)

To Qualify as a Medical Man.

SIR.—Might I point out to your correspondent, Mr. J. P. Williams, that the 379l. 11s. was the amount that it cost me outside board, lodging, and clothes? I thought that I had shown that plainly, for I said that I reckoned as expenses anything spent from leaving home in the morning till returning at night. The amount put down as food was what it cost me for midday luncheons during the five years. As regards the Preliminary subjects, some of the Universities, especially London, have made very considerable changes since 1898, the date that I entered. I simply stated what was necessary then. If I can give any of your subscribers further information or advice per letter, I shall be very glad to do so.

Yours faithfully,

"MEDICUS." (223/9.)

Mr. Glyn-Jones's Testimonial Fund.

SIR.—Reading Mr. Barclay's letter in your last issue, I must confess I regretted that it had been found necessary to publish such a warning notice in reference to this testimonial, because as soon as the idea was mooted I certainly hoped it would have attracted instant and universal approval and adhesion. Mr. Barclay tells us that 9,000 circulars were sent out a month ago, and up to the present time only 344 replies have been received. I cannot think this lukewarm response represents in any degree the ultimate result of the appeal, for if there is one man within our craft, at the present time, more known, respected, and esteemed than any other, it is Mr. W. S. Glyn-Jones, and therefore I am persuaded it must be forgetfulness, or delay in reply, on the part of those who are equally as earnest and determined as myself to do his part so that this testimonial shall not only be successful, but fully commensurate with the dignity of the craft. Assuming, then, that the reason of the delay in sending subscriptions given by Mr. Barclay is correct, I would like respectfully to remind intending subscribers of the old maxim: "*Bis dat qui cito dat*"; then if each donation sent from this date represents the genuine feelings of the donor, no doubt a substantial fund will be realised. This testimonial, however, must not be considered as a means simply for raising money. I hope a far loftier idea will pervade all the proceedings connected with it, and thereby the more impressively convince the recipient of the high appreciation in which he is held by his fellow-craftsmen, by virtue of the splendid example he has given them of persistent energy and untiring zeal for the general good.

I have no hesitation in saying that, in my opinion, all who subscribe to this testimonial, while honouring Mr. Glyn-Jones, will in a far greater measure honour themselves.

Yours faithfully,

R. FEAVER CLARKE.

21 High Street, Gravesend, August 22, 1904.

A Pharmacy Guild.

SIR.—"Xrayser" pours a refreshing shower of cold water on my scheme for inducing qualified assistants to serve their interests better than by helping unqualified companies to cut their prospective throats. Many men have said, however, that the idea is a distinct step in the right direction, and are joining. The nominal fee of a shilling merely covers any clerical expense that may be

involved, and there is no further expense of any sort. As the only hope of the future appears to be to induce the qualified assistants to protect their own interests, it seems only right that they should bear the brunt of the battle. But as the movement is never likely to lead to any strike, the expression may be taken to be more figurative than real. That the employers will reap the fruits of the victory depends on the way the guild increases in number, and as the assistant of to-day may become the employer of to-morrow that is all the more reason why he should combine now in the way suggested, laying up "fruits of victory" for the time when he goes into business for himself. It is very plain that something must be done to prevent all the plums in pharmacy going to the unqualified companies, and in the absence of the ability of the Pharmaceutical Society to do anything to stop the piracy, it becomes the duty of every qualified assistant to withhold that assistance which enables these people to carry on their schemes of theft from the legitimate qualified chemist. Many of them hoist the title which is not theirs, and then by flaring advertisements deceive the public into a belief that every branch shop is conducted by a qualified manager, which we all know is untrue. The public, having already believed this lie to be truth, think the chemist a liar who attempts to undeceive them. If chemists generally are content with this condition of things, then I will say no more. But at present I do not think they are, and in duty to myself, I consider it absolutely necessary to do what I can to remedy the absurd state of pharmacy which our want of proper laws has brought about us.

If, therefore, "Xrayser" (or anyone else) will draft a workable scheme superior to the one already indicated, I shall be very happy to assist in making it an unqualified success.

Yours faithfully,

C. E. PICKERING.

12 James Street, Westbourne Terrace, W.

Letters in Brief.

PERFORATED MEDICINE-STAMPS.—*Mr. C. J. Sage, Frome* (222/63) revives the suggestion that medicine-stamps might be supplied by the Inland Revenue authorities with perforations similar to postage stamps. He thinks some alteration in the present practice is badly needed.

CLEANING WEIGHTS AND MEASURES.—*Jason* (224/25) writes that he makes it a rule to send all his weights and measures to be verified each year, and never has any trouble with the inspectors. For cleaning brass chains and other small articles [presumably weights, Ed.] Jason's plan is to get a round tin, throw in a handful of sawdust and an ounce or two of emery or crocus powder, and having dipped the articles to be cleaned in turpentine or petroleum, place them in the box and well shake for a few minutes, finally polishing with a dry duster. To clean glass-measures which have contained resinous tinctures a preliminary rinse with methylated spirit is the best plan. The spirit is transferred to an odd bottle and used up when making French polish or spirit varnish.

AUSTRALIAN SPONGES.—*Mr. Ernest Cresswell* (International Sponge Importers, Limited), writing in regard to the sponges of Western Australia (*C. & D.*, August 6, page 236) says: "The possibilities of Australia as a sponge-producing country have not been overlooked by the sponge importers of London. I have visited," he says, "the various coasts of the Australian colonies and brought back with me specimens of the best sponges found there. None of them were of any commercial value, as they were lacking either in strength or durability, or in power of absorption. These specimens were obtained from depths varying from a few feet to the utmost depth that the diving apparatus employed by the pearl fishers would allow."

Legal Queries.

Labels to be marked "Liable" or "Not liable" to medicine stamp-duty should be sent to the Editor in duplicate and with a stamped and addressed envelope for return of the marked ones, if desired.

221/4. *West Riding.*—As the carron-oil label discloses the composition of the oil, and is, moreover, a known and admitted remedy, you can recommend it as much as you like without incurring stamp-liability.

208/6. *J. G. P.*—Absence from duty through illness during three months or so of an apprenticeship has not to be made up at the end of the term. If you will examine the contract or indenture, you will find that it is only for the dates specified therein.

213/13. *Veritas.*—Verbal notice to terminate an agreement between an employer and an assistant is generally acted upon, but, in the event of a dispute, the person who gives the verbal notice must, of course, be able to substantiate it in some manner.

212/18. *Kieselyuhr.*—Your foot-powder label is exempt from medicine stamp-duty.

81/15. *L. G.*—Your anti-cholera mixture will not be liable to duty if you put on it "Phar. Formulas '66."

215/48. *Osmene.*—"Menthoform Eau de Cologne: delightfully cooling to the head" is not a dutiable description.

84/21. *W.*—You do not tell us what class your trademark is registered in. If for chemicals used in medicine, you cannot stop its use for bread (under registration) by another person.

22/30. **Tenancy Question**—*J. W.* writes: "On April 1, 1903, I rented a house, and my verbal agreement with the landlord was that the rent be paid quarterly and three months' notice be given on leaving. I wish to give notice on September 30 of my intention to vacate the house on December 31. Is this strictly legal?" [We think our subscriber may give a valid notice on September 30 that he intends to quit at the expiration of that quarter on December 31, 1904.]

Miscellaneous Inquiries.

We endeavour to reply promptly and practically to trade questions of general interest, but cannot guarantee insertion of replies on a particular date, nor can we repeat information given during the past twelve months.

210/50. *Soparicus.*—Protecting New Medicine—Patenting a new combination of drugs is not satisfactory to the patentee, as very little protection results. You had better keep the invention to yourself and try and work up a local sale for the medicine. Having some data as to its success to go upon, you might then be able to induce a capitalist to advance money for advertising purposes.

222/72.—*R. Y. M.*—We cannot find further particulars of the nitrous-oxide death referred to in the Registrar-General's Report for 1902.

210/73. *Veritas.*—The formula for **Salol Dentifrice** was given in the *C. & D.*, March 26, page 515. We have since found that the quantity of salol needs reducing as a part is deposited on keeping.

223/39. *Hyd. Perchlor.*—The objects of the Incorporated Society of Extractors and Adaptors of Teeth are, we take it, to protect the interests of unregistered dentists and probably defend the members should they be prosecuted. You should investigate the objects of a society before you become a member.

223/36. *A. T. B.* asks what "the black sneezing-snuff is that is being largely sold just now in small vials. Its object seems to be merely amusement." Perhaps some reader who knows the preparation can supply the information wanted.

218/43. *J. R.* The film on the interior of the ancient water-bottle, and which you have been unable to remove with either acids or alkalis, is due to corrosion of the glass, and not to the deposit of lime salts. Chemical treatment is of no avail.

Information Wanted.

Postcard replies to any of subjoined inquiries will be esteemed.

222/9. What are Crusen salts?

223/5. Who are the London agents for Reichert's (Vienna) microscopes?

225/28. Who are the makers of "Panama bombs"?

225/38. Who are the makers of "Japanese Toothache Drops"?

Trade Report.

NOTICE TO BUYERS.—The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers stock the goods. Qualities of drugs and oils vary greatly, and higher prices are commanded by selected qualities even in bulk quantities. It would be unreasonable for retail buyers to expect to get small quantities at anything like the prices here quoted.

42 Cannon Street, London, E.C., August 25.

THE produce markets, with a few exceptions, show continued dullness. In crude drugs, the principal feature is an advance in some of the more or less important American indigenous roots and barks, such as golden seal (*hydrastis*), lobelia, sassafras, serpentary, blackhaw, and wild-cherry bark. Senega is unaltered but firm. New crop podophyllum root is rather lower, and cascara sagrada for shipment is offered at low prices. Good belladonna root is still scarce. Belgian chamomiles are firm, and the crop is almost at an end. Ergot is very scarce and rising. Rio ipecac. is steady, and a moderate quantity has come to hand. Norwegian cod-liver oil keeps firm, most agents looking for an advance shortly. Menthol is dull; saffron is firmer in Spain; opium is quiet, and quinine in second hands is firmer. In essential oils Wayne County peppermint is in fair inquiry and shows an advancing tendency. HGH is about steady, and an easy feeling is still apparent in Japanese dementholised oil. Spike oil is likely to be higher, and the prices for the new otto have been "fixed." Among spices, Zanzibar cloves for delivery and arrival are dearer, with good business; black and white pepper is dearer, and ginger is quiet. A small vanilla sale was held on Wednesday at which prices were generally unaltered. The subjoined table shows the principal alterations of the week.

Higher	Firmer	Easier	Lower
Chamomiles	Lavender-flowers	Acid. tartaric	Podophyllum-root
Ergot	Oil, peppermint (Wayne County)	Chillies	Oil, linseed
Golden-seal		Cream of tartar	
Oil, cocoanut			
Opium (in Smyrna)	Quinine (second hands)		
Pearlashes			
Rose-petals (French)	Saffron		
Sassafras-bark	Shellac		
Serpentary	Turmeric		

Cablegrams.

SMYRNA, August 24 :—The sales of opium for the week ending Wednesday amount to 150 cases for American and speculative account, at prices showing an advance of 2*d.* per lb.

HAMBURG, August 25 :—Carnauba wax is lower at 250*m.* per 100 kilos, for grey. Coriander-seed is dearer, 47*m.* per 100 kilos, being asked. Ergot is very firm.

NEW YORK, August 25 :—Business is quiet. Opium is slow of sale at \$2.65 per lb. for druggists, in single cases. Quinine is dull at 21*c.* per oz., and ergot has advanced to 39*c.* per lb. The following articles are firmly held with a tendency towards advancement :—Peppermint oil at \$3.50 per lb. for bulk, senega at 70*c.*, Mexican sarsaparilla at 13*c.* per lb., and new cascara sagrada at 9*c.* per lb. On the other hand menthol is depressed, and \$3.75 per lb. will now buy.

Liverpool Drug-market.

Liverpool, August 24.

KOLA.—A small parcel has been sold on the market at 3*d.* per lb.

CASTOR OIL.—There are no further arrivals of good seconds Calcutta, and the small stocks in store are held firmly at

2⁵/₈*d.* per lb. First-pressure French is quoted at 2³/₄*d.* There is no change in the position for Calcutta or French forward.

CORIANDE-SEED.—The only holder now quotes 24*s.* 6*d.* per cwt.

ERGOT.—Hamburg agents are quoting 1*s.* 8*d.* per lb., for both Spanish and Russian, c.i.f.

SENEGA.—An agent for New York now quotes 3*s.* 2*d.* per lb., c.i.f.

COD-LIVER OIL.—Some parcels of old Newfoundland are firmly held at 4*s.* 6*d.* to 5*s.* per gal., and new to arrive is quoted 5*s.* 6*d.* to 6*s.* Merchants report considerable sales to go direct to Norway.

CALABAR BEANS.—Small sales have been made at 3¹/₄*d.* per lb., in store.

HONEY.—The business includes Californian at from 37*s.* to 40*s.* per cwt., Chilean at 28*s.*, and Jamaica at 22*s.* 6*d.*

SPERMACETI.—Chilian refined has been sold at 11*d.* per lb.

WAX, BEES'.—The sales include 9 bags of Chilean at 7*d.* 5*s.* per cwt.

POTASHES.—Montreal potashes are in small demand at 32*s.* 6*d.*, and *Pearl* are firmly held at 41*s.* 6*d.* per cwt.

German Drug-market.

Hamburg, August 23.

Business is still very quiet.

ANISEED is tending firmer, and is quoted to-day at 39*m.* per 100 kilos.

AGAR-AGAR.—Prime is quoted 275*m.* and average quality 250*m.* per 100 kilos.

ANTIMONY is unchanged at 27*m.* per 100 kilos.

CAMPHOR.—Refined, in first hand, is quoted 525*m.*, and in second hand 510*m.* per 100 kilos.

CASCARA SAGRADA is quoted on the spot at 120*m.* and forward 90*m.* per 100 kilos.

CUMIN-SEED is offered cheaply at 37*m.* per 100 kilos.

CANARY-SEED is tending firmer at 38¹/₂*m.* per 100 kilos, for new crop.

ERGOT is very firm at 350*m.* per 100 kilos.

GOLDEN SEAL is firmly held at 13*m.* per kilo.

CANTHAIDES is scarce; Russian is quoted 325*m.* per 100 kilos.

IPECACUANHA is firm, owing to reduced stocks. Rio is quoted 10¹/₂*m.* and Cartagena 9¹/₂*m.* per kilo.

LYCOPODIUM is firmer at 660*m.* per 100 kilos.

MENTHOL is quiet on the spot at 29*m.* to 29¹/₂*m.* per kilo., and forward 26*m.* per kilo.

QUININE is quiet at 32*m.* per kilo.

SPERMACETI is dull of sale at 195*m.* to 190*m.* per 100 kilos.

SUGAR OF MILK is steady at 110*m.* per 100 kilos.

WORM-SEED is firmer at 110*m.* per 100 kilos.

OILS (FIXED).—Castor shows little business. First-pressing in barrels is quoted 43¹/₂*m.* per 100 kilos. Cod-liver is quiet at 155*m.* per barrel for non-congealing oil. Palm-kernel is quiet, and Linseed is advancing.

OILS (ESSENTIAL).—*Star-aniseed* is firm at 10¹/₂*m.* per kilo., *Peppermint* (HGH) is firm at 17*m.* per lb., and Japanese is quiet at 11*m.* per kilo.

American Drug-market.

New York, August 16.

Business is seasonably dull, but the outlook for the fall is promising, despite the fact that the Presidential election is nearing, when trade is proverbially bad.

CASCARA SAGRADA BARK is not in active demand, and prices are unchanged. Supplies of new bark are offered from the Pacific coast at 8*c.*, f.o.b. New York. Prime 1903 bark is nominally quoted at 10*c.*, but less will buy. Up to 16*c.* is asked for prime old quill bark.

COD-LIVER OIL is in fair demand and slightly firmer, but many buyers are holding off in anticipation of a lower market. Nothing is offered below \$45. Newfoundland is quoted at \$1.50 per gal.

DAMIANA LEAVES. No demand of importance is evident, but the market is firm in sympathy with advices from primary sources. Spot quotations are 8¹/₂*c.* to 9*c.*

ERGOT is slow of sale but firm, and any improvement in demand would cause an advance. Spanish is offering at 34*c.* and Russian at 33*c.*

GOLDEN SEAL (HYDRASTIS) is still exceedingly scarce, and spot supplies of spring root are held at \$1.35. For prime fall root \$1.50 to \$1.75 is asked.

JAPAN WAX is very dull, and 12³/₄*c.* is a nominal quotation.

MANDRAKE.—New crop is coming in, and the market is easier at 6¹/₂*c.* to 7*c.* Prime old root is held at 9*c.*

MENTHOL dull and depressed, with \$4 quoted for cases.

OIL OF PEPPERMINT is receiving little attention, but quotations are firm at \$3.50 for bulk and \$3.75 for HGH. Small jobbing lots are selling at \$3.40.

OPIMUM is weak in the absence of demand, and prices are unchanged at \$2.65 for case lots.

QUININE has declined to 21*c.* Demand is poor, and very little is offering from second hands.

SARSAPARILLA.—Mexican is firmly held at 13c. Sales, ex dock, have been made at 12c. Honduras is scarce and firm at 25c. to 27c.

SENEGA-ROOT is improving and in better demand. Stocks are limited, and sales have been made up to 67c. Holders of spot goods now ask 72½c. to 75c.

SASSAFRAS-BARK is firm at 8½c. to 10c. per lb.

ACETONE.—There is a considerable scarcity, and offers from the makers are difficult to obtain, owing to the advance which has been taking place in acetate of lime for some months past. The present price is from 58s. to 59s., c.i.f.

ACID, ACETIC, is firm, dealers offering glacial at 30s. and 90 per cent. at 26s. 6d. per cwt., ex wharf.

ACID, CARBOLIC, is dull and pressed for sale; B.P. quality detached crystals 39° to 40° C. is quoted 6½d. to 7d. for quantity in bulk packing; 34° to 35° C. is 6d. to 6½d. per lb. *Cresylic* 95 per cent. is 9d. to 11d. per gallon, and 75 per cent. *crude* 2s. 2d. to 2s. 3d.

ACID, CITRIC, is steady at from 1s. to 1s. 0¼d. per lb.

ACID, TARTARIC.—A fair amount of business is reported in foreign at 11½d., and English at 1s. per lb.

The exports of tartar and tartaric acid from Bari during 1903 amounted to 2,337 tons, valued at 153,330l., against 1,870 tons, valued at 117,790l., in 1902. From Barletta 523 tons of tartar and tartaric acid, valued at 21,650l., were exported last year.

AGAR-AGAR.—Steady. Fair to good No. 1 quality strip may be had at from 1s. 4d. to 1s. 5d. per lb., and ordinary at from 1s. 2d. to 1s. 3d.

ALOES.—The arrivals include 15 cases of Zanzibar aloes in small skins of good quality, which are expected to meet with a ready sale.

ASAFETIDA.—Part of the parcel offered at auction last week has since been sold at 70s. per cwt. for some of the first lots.

BELLADONNA.—Good quality is difficult to obtain, that on offer mostly referring to common root; for fair 40s. per cwt., c.i.f., has been paid.

BENZOIN.—The shipments from Singapore from January 1 to July 15, 1904, were as follows: Great Britain, 877 piculs; Continent, 1,761 piculs; and the U.S.A., 49 piculs. The arrivals in London include 40 cases of Sumatra, part of which is said to be good quality.

BUCHU.—Some small sales of parcels offered in auction have been made at 7d. per lb. for fair round greenish stalky, and 6d. for ovals.

CALUMBA is moving off in small lots, and the business done includes 30s. paid for washed pickings. Fine picked is held for extreme prices.

CANARY-SEED is firm, the price in the producing countries being considerably above the London spot values. The quotation here is still 80s. per quarter, but to effect sales a slight reduction has to be accepted for the lower qualities.

CANNABIS INDICA.—Some rather large arrivals of siftings took place a few days ago, and there is a fair quantity of tops now available. The price, however, is firm at 4s. 3d. and further business has been done this week; for siftings 4s. is quoted. A rumour has been current that the Indian Government is about to again increase the export duty, but so far no confirmation is obtainable. In certain quarters some credence is attached to the report, and it is suggested that the recent shipments have been made in order to avoid the increased duty.

CASCARA SAGRADA.—For October-November shipment new crop has been offered at 39s. 6d. per cwt., c.i.f. saifer, and for September-October shipment overland 35s. to 36s. c.i.f., has been quoted by a canned-goods house. The latter quotation is subject to certain conditions, including "canned-goods" terms, which practically mean that if the goods are unobtainable at this price the contract falls through.

CHAMOMILES.—Belgian flowers continue very firm with sales of small lots of first pickings at 82s. 6d. per cwt., c.i.f.; there is, however, very little to be had at this price, and another agent's quotation for firsts is 92s. 6d. Old flowers continue to advance in sympathy, and are quoted at from 55s. to 70s., according to colour; brown have been sold at 57s. 6d. The crop is expected to be over by the end of the month.

CHIRETTA.—Several sales of ton lots have been made at 2¾d. to 3d. per lb.

CINCHONA.—The auction to be held at Amsterdam on September 1 will consist of 9,034 bales and 464 cases, weighing 844,288 kilos, and containing 43,856 kilos. quinine sulphate. The manufacturing-bark contains an average of 5.57 per cent. against 5.49 per cent. for the last July auction, and an average of 5.32 per cent. for the ten auctions held in 1903. A lot of 54 bales fine Loxa quill has arrived, and will probably be offered next week, at Amsterdam.

COCOA BUTTER.—The auction to be held on September 6 will consist of 75 tons Van Houten's, 12½ tons Mignon, 8 tons de Jong, and 3 tons of a foreign brand.

CORIANDER-SEED is again a little dearer, with sales of old crop at 22s. 6d. and new at 24s. per cwt.

CREAM OF TARTAR.—Quiet at 79s. to 80s. for 95 per cent. powder, and 81s. to 82s. for 98 per cent.

CUMIN-SEED quiet at 18s. to 21s. per cwt. for Mogador.

DEXTRINE.—In addition to the information published last week, we now hear from the Continent that in consequence of the unfavourable prospects for the harvest, prices have risen considerably, and although 30m. and over is asked for first quality, yet even at this figure manufacturers are not inclined to take large orders at the moment.

DRAGON'S-BLOOD.—The exports from Singapore to Great Britain from January 1 to July 15, 1904, amounted to 38 piculs.

ERGOT.—This article is one of the features of the week, and owing to the scarcity it is difficult to complete orders. Good sound Spanish is held at from 1s. 8d. to 1s. 10d. on the spot, and offers of slightly less have been refused. Several sales of old Russian have been made at 1s. 6d. on the spot, and sound in one instance is quoted 1s. 7d. net. To-day 2s. 4d., c.i.f., is quoted for new crop Spanish, and the market is tending in this direction.

ETHER, SULPHURIC.—Advices from the Continent report a firm market, and as there is a probability of higher prices, owing to the dearth of spirit, many people have covered their requirements lately.

FENUGREEK-SEED slow at 8s. 6d. per cwt. for new crop Morocco on the spot.

GAMBIER.—Small sales of fair cubes have been made on the spot at 30s., being easier.

GAMBOGE.—The exports from Singapore to Great Britain from January 1 to July 15, 1904, amounted to 80 piculs, and to the U.S.A. 57 piculs were shipped during the same period.

GENTIAN.—If the dock strike which is now taking place in Marseilles should be prolonged, it is quite possible the shipments of this article may be interfered with. Holders on the spot ask 19s. 6d. to 20s., at which small sales have been made.

GLYCERIN.—An advice from the Continent states that in consequence of keen competition and the offers from new works, the position of refined glycerin is tending towards easier prices, although the position of the crude article is reported steady.

GOLDEN SEAL.—We understand that the London stock in first hands consists of one bale only, and that is held for the extreme figure of 6s. per lb., net, for fall-dug. The spring-dug root, which contains little, if any, hydrastin, is quoted from New York at 5s. 8d. per lb., c.i.f., which is the highest figure on record. In view of the present scarcity practically no distinction is now made in the United States between fall and spring dug.

GUM ARABIC.—In auction 458 packages of Soudan were offered and 124 sold, without reserve, at 18s. 6d. to 19s. for dusty glassy sorts, fair, rather hard, at 20s. 6d. to 22s., and good softish 24s. 6d.; 50 packages Aden sorts were bought in at 30s., and Ghatti pickings at 17s. 6d. Seven packages ordinary red Australian at 14s.

IRECACUANHA.—The ss. *Nile* from Monte Video has arrived with 62 bales, and an arrival of 7 bales has taken place at Liverpool per *Oropesa* from Rio. After the sale last week some 30 bales were disposed of partly for the home trade, mostly at 4s. 5d. per lb. for fair Rio. The deliveries of Rio for the month so far amount to 60 bales.

Cartagena continues slow of sale at from 4s. 4d. to 4s. 5d. upwards, but there is one seller at 4s. 5d.

ISINGLASS.—At the periodical auction on Tuesday good and fine Brazilian lump was 1d. to 2d. per lb. cheaper, but common was steady. A large supply of Bombay was offered, of which a small part sold at steady prices, purse, however, showing an easier feeling. West Indian was steady and Penang leaf and tongue firm to dearer, purse being weaker. Long Saigon leaf firm to 1d. to 3d. per lb. dearer, round full up, and purse easier.

JABORANDI.—The s.s. *Grangense* from Parnahyba has arrived at Liverpool with 171 bags.

KOLA.—In the spice auctions 11 packages of West Indian sold, including green at from 6d. to 10d., dry at from 3d. to 3½d., and common at 2d. per lb.

LAVENDER-FLOWERS.—New hand-picked are now quoted at 40s., an advance of 2s. on our previous quotation.

LIME-JUICE.—Good raw West Indian may be had at 1s. 2d. per gallon, and refined at 1s. 5d.

MENTHOL.—For the premier brand 11s. 3d. to 11s. 6d. per lb. is quoted on the spot, according to quantity.

MYRRH.—Fair Aden sorts have been sold, ex-auction, at 90s. per cwt.

NUX VOMICA.—Several lots ex-auction were sold privately last week, including about 100 packages at 7s. per cwt. for ordinary dullish Bengal, and 7s. 9d. for fair bright Madras seed.

OIL, CASTOR.—Steady. Hull make of first pressing is quoted 21l. 17s. 6d. per ton, and seconds 19l. 17s. 6d. for September-December delivery, and 22l. 2s. 6d. and 20l. 12s. 6d. respectively for January-April delivery, ex-wharf London. Belgian of first pressing may be had at 21l. 15s. for firsts and 19l. 15s. for seconds, either prompt or forward delivery, ex-wharf. Calcutta is dull of sale at 5½d. per lb. for firsts and 2¼d. for seconds.

OIL, COD-LIVER.—Our Bergen correspondent writes on August 20 that the market for cod-liver oil continues quiet, but in spite of this holders are very firm, and the quotation for finest non-congealing Lofoten oil is easily maintained at 160s. per barrel, f.o.b. Bergen. The exports from Bergen up to date amount to 4,313 barrels against 1,532 barrels at the corresponding date of last year. Prices in London range from 150s. to 160s. per barrel, and for Newfoundland 5s. less than the above would be accepted. Business however, is unimportant.

OIL, EUCALYPTUS.—The s.s. *Pyrhus* from Melbourne has brought 229 cases.

OIL, LEMONGRASS.—Sellers ask 8½d. per oz., at which small sales have been made.

OIL, PEPPERMINT.—There has been a fair inquiry for English oil, a leading distiller's quotation for which is 28s. per lb. in quantity. American HGH is steady on the spot at from 15s. 1½d. to 15s. 3d., with small sales thereat. Pure Wayne County oil is scarce and has an advancing tendency, 15s. being asked; there is a fair inquiry. *Todd's* brand has been sold at 16s., and to-day 17s. is quoted with no offers to be had for forward delivery. For Japanese demethylised oil 5s. 1½d. per lb., spot, has been paid; and for December-January shipment 4s. 6d., c.i.f., is quoted for Kobayashi, but this price is on behalf of one firm of importers only. Suzuki brand, on the other hand, is quoted 4s. 11d., c.i.f.

OIL, SPIKE.—Reports to hand from the Alpes-Maritimes and the Pyrenées intimate that the yield will probably be only one-tenth that of last year, and that it will be later than usual. No quotation is yet available for new oil, but it will probably be about 3s. per lb.

OIL, WOOD.—Quiet at 25s. per cwt., c.i.f., for Hankow.

OLIBANUM.—Quiet. In auction 800 packages were bought in, including good drop at 50s., fair drop 37s. 6d. to 42s., pickings 18s. to 22s., fine 32s. 6d. to 40s., and ordinary siftings 15s. to 16s.

OPIMUM.—The London market is still quiet, and in Turkish descriptions no business of importance has been done. Persian is firm at 11s. 9d. per lb. on the spot, and bids of 3d. less have been refused for export orders to China, from which country a strong demand is manifested.

SMYRNA, August 12.—An active business has been done this week, sales amounting to 181 cases, as follows: Thirty-five cases of current tale quale for the United States; 21 cases Yerli, Karahissar, and current t.q. for England; 41 cases Yerli, Karahissar, and Boghaditz for Germany and France, and 84 cases current t.q. on speculation, part of which will be shipped to London on consignment. Current t.q. qualities have declined about 2d. per lb., but Yerli, Karahissar, and other rich grades are well maintained. Current manufacturing is quoted at from 6s. 1d. to 6s. 7d. per lb. as to quality; Karahissar, Yerli, and Boghaditz as to quality and buying conditions, 6s. 8d. to 7s. 4d. per lb. The arrivals in Smyrna to date amount to 2,405 cases, against 771 cases at the corresponding period of last year.

SMYRNA, August 12.—The market has been animated this week owing to a good consumptive and speculative demand, the latter being facilitated by the banks. The sales during the past fortnight amount to 351 cases new Adette, Karahissar, and Yerli t.q. at from 6s. 4d. to 7s. 3d. per lb., c.i.f. Nothing has been done in old merchandise. In the above figures 65 cases were for local speculators. The arrivals amount to 2,470 cases, against 780 cases at the same date of last year. It is reported that the larger part of the pressing orders have been executed, and on the large orders a slight concession has been granted.

CONSTANTINOPLE, August 19.—The market is weaker, and looks like going down still further. Were it not for the ill-advised purchases in Smyrna since commencement of new crop, prices to-day would have been 5 to 10 per cent. lower. As it is, it is difficult to understand how values can be maintained at their present level much longer, unless buying on a large scale continues and weather conditions in the late autumn prove unfavourable. The stock in Turkish seaport towns exceed 8,000 cases, and there are another 5,000 to 6,000 cases still to come from the interior. The week's sales amount to 15 cases New "Soft" at 7s. 6d. to 7s. 10d., 4 cases Old "Soft" at 7s. 5d., and 27 cases "Druggists" at 6s. 4d. per lb., f.o.b.

ORANGE PEEL.—The price for Maltese thin-cut peel still remains firm at 10½d. to 11d. per lb. Fair quantities of English may be had at 1s. for old and 1s. 1d. for new.

OTTO OF ROSE.—The prices for the new crop of otto have now been "fixed," and for finest quality 18s. to 18s. 6d. per T. oz., c.i.f., London is quoted by agents.

PODOPHYLLUM-ROOT.—The new crop is coming in more freely on the New York market, and is offered from producing centres at lower prices. A new arrival of fall-dug root has taken place on the London market, and the price can now be shaded to 40s., net.

POTASH SALTS.—*Chlorate* is steady at 3½d. to 3¾d. per lb., net., for crystals, and 3¼d. to 3½d. for powder on the spot; and in Liverpool 3d. to 3¼d. per lb., f.o.b., is quoted. British refined *Saltpetre* is offered at from 22s. to 22s. 6d. in kegs and 21s. to 21s. 6d. in barrels, and German at 22s. in kegs and 21s. 4½d. to 22s. per cwt. in barrels. English yellow *Prussiate* of potash may be had at from 5½d. to 6d. per lb., and Beckton 4½d. *Pernanganate* is 35s. per cwt. for small crystals, and *Bichromate* is 5d. per lb. The nominal price of *Bromide* remains at 1s. 10d. in quantity from English makers, with outside makes offering at from 1s. 7d. to 1s. 8d. per lb.

QUININE.—A steadier feeling has prevailed in second-hands, with small sales of the usual German brands of sulphate in bulk at from 10½d. to 10¾d. for September and 11½d. for December, these positions showing a fractional advance on the week. Spot is quoted 10¾d. to 11d. per oz.

For the twelve months ending June, 1904, the imports of quinine into the United States amounted to 3,884,921 ozs., against 3,373,381 ozs. for the same period of 1903. The cinchona imports amounted to 3,605,131 lbs., against 3,978,850 lbs.

ROSE PETALS.—Red French are dearer at from 1s. 11d. to 2s. per lb.

SAFFRON.—There has been an advance in Spain equal to 1s. 8d. per lb., and the tendency is altogether firmer here. One of the principal importers has practically nothing to offer at the moment.

SARSAPARILLA.—In the lower grades of Honduras business has been done at from 1s. 2½d. to 1s. 3d. per lb. A fair quantity of red native has been sold since the auctions at steady prices. No arrivals of grey have taken place.

SASSAFRAS-PARK of the root is dearer at 46s. per cwt., net, on the spot.

SCABLAC.—About 40 bags, ex-auction, were sold privately last week at rather lower prices, including fair bright free Madras at 7l. 15s., and siftings at 50s. to 55s. per cwt.

SENEGA is still held for 3s. 2d., net, or 5s. 1d., c.i.f.

SENNA.—Most of the bold greenish, partly specky and slightly sea-damaged Tinnevely leaf offered and bought in at auction last week was afterwards sold at from 3½d. to 4d. per lb.

SERPENTARY, in conjunction with several other American indigenous drugs, is dearer, offering at from 1s. 7d. to 1s. 7½d. per lb., net, on the spot.

SHELLAC.—On the spot small sales of fair TN orange have been made at from 210s. to 211s. per cwt. There is a restricted demand for good and fine second orange marks, values of which ranged from 230s. to 250s. AC Garnet is unaltered at 190s., spot, and 187s., c.i.f. Button lac is difficult to move, even at lower prices. Futures have shown a firmer feeling throughout, and a moderate business has been done, including August delivery at from 209s. to 210s., September at 209s. to 211s., October at 206s. to 211s., and December at from 197s. to 204s. These prices are from 4s. to 7s. dearer, according to position, than the closing quotations of last Friday.

SODA SALTS.—Refined Nitrate is quoted at 10s. 6d. per cwt., and ordinary at 10s. 3d. Caustic may be had at 10l. 10s. for 70 per cent. white on the spot, and 60 per cent., 9l. 10s. In Liverpool 76 per cent. is quoted 10l. 10s., 70 per cent. 9l. 15s., and 60 per cent. 8l. 15s. per ton. f.o.b. Crystals are quoted 65s. in barrels and 62s. 6d. in bags on the spot; Liverpool 67s. 6d., f.o.b. Bicarbonate in kegs is offered at 7l. 5s. per ton, landed terms, and in casks 6l. 5s., f.o.b. Liverpool. Hyposulphite in kegs may be had at 6l. 10s. per ton on the spot for British make, and 5l. 10s., f.o.b. Liverpool, in casks. Bichromate of soda is 2¼d. per lb.

Sor.—Fair to good ordinary thick is quoted at from 1s. 5d. to 1s. 6d., and extra thick at 1s. 8d. per gal., duty paid.

SPICES.—At auction on Wednesday over 1,000 packages of Jamaica Ginger were offered, of which about 200 sold at steady prices, further moderate sales being afterwards made privately. Good washed brought 46s. to 47s. 6d., fair washed 37s. 6d., ordinary to middling dullish 33s. to 36s., and ordinary 29s. Of Cochin 69 cases were offered, of which 57 sold, including small medium cut mouldy at 28s. 6d. and 58 bags of small cut at 26s. No Pepper was offered. Privately the market is firm and dearer, with a moderate business at 5½d. to 5½d. on the spot for fair, and for August-October shipment 5½d. to 5½d. has been paid. Good bright Singapore White Pepper sold in auction at 9d., being firm. Privately Singapore is firmer with business at 7½d. on the spot for fair and 7½d., c.i.f., for August-October steamer. Penang is steady at 7½d. for fair on the spot, and for arrival 6½d., c.i.f., has been paid for 10 tons. Chillies were rather easier, 91 bags good Nyassaland selling at from 43s. to 44s. 6d., and good large red Japanese were bought in at 40s. Pimento quiet, fair (70) selling at 2½d. per lb. Both Nutmegs and Mace were steady, and of the latter fine pale West Indian realised 1s. 8d., fair 1s. 4d. to 1s. 5d., and ordinary 1s. 2d. to 1s. 3d. Penang Cloves (32) were bought in at 11d. for good bright picked and darker ditto at 10d. Privately, up to Wednesday the speculation market had been quiet and tending easier, but on that day the market took an upward turn on news of more business doing in Zanzibar: some 800 bales sold for delivery at 7d. to 7½d. for August-October and 6½d. to 6½d. for October-December. To-day the delivery market has been somewhat excited and over 2,000 bales have been sold, including January-March, at 6½d. to 6½d., August-October at 7½d., and buyers of October-December at 6½d. Spot has been sold during the week at from 7½d. to 7½d., and a large business has also been done to-day for arrival.

TURMERIC is firmer, 15s. per cwt. having been paid for fine bright Madras finger.

VANILLA.—At auction on Wednesday the small supply of 190 tins was offered, and practically all sold. The finer qualities had been withdrawn, as holders anticipate an improvement in prices later. Fair to good qualities were unaltered, and brown and foxy were in better demand at an advance of 6d. to 1s. per lb. The following prices were

paid: Seychelles.—Fair to good, 7 to 8 inches 12s., 6½ to 7½ inches 7s. 6d. to 8s. 9d., 6½ to 7 inches 6s. to 7s., 3½ to 6½ inches 4s. 6d. to 6s. 9d.; common, 5 to 8 inches 6s. 6d., 4 to 7 inches 4s. to 5s. 9d., 5 to 6½ inches 2s. 6d. to 5s.; slightly mouldy, 1s. 6d. to 3s. 3d. Ceylon.—Fair to good, 5 to 8 inches, at 4s. 6d. to 6s.; mouldy and foxy, 1s. 9d. to 3s. 6d. per lb.

The value of exports from Madagascar during 1903 amounted to 8,265l., against 12,084l. in 1902, 6,400l. in 1901, 8,827l. in 1900, and 5,634l. in 1899.

WAX, BEES.—Fair bleached Calcutta has been sold privately at 7l. 2s. 6d. per cwt. The value of the exports from Madagascar during 1903 amounted to 22,241l., against 31,581l. in 1902, 25,989l. in 1901, 20,312l. in 1900, and 21,023l. in 1899.

WAX, JAPANESE.—Good pale squares have been sold on the spot at 55s. per cwt., being steady.

Arrivals.

The following drugs, chemicals, &c., have arrived at the principal ports of the United Kingdom from August 18 to 24, inclusive: Acetone (@ Stettin), 8 dms.; acid, acetic (@ Fredrikstad), 60 ebs. 45 cks., (@ Christiania) 23; acid, carbolic, crude (@ Amsterdam) 30 cks., (@ Rotterdam) 50; acid, citric (@ Bordeaux), 10; acid, lactic (@ Hamburg), 10; acid, sulphuric (@ Amsterdam), 75 cks.; acid, tartaric (@ Rotterdam) 12, (@ Antwerp) 10; albumen (@ Shanghai), 6; aloes (@ Mossel Bay), 7; ammonia, anhydrous (@ Philadelphia) 150 cyldrs., (@ Antwerp) 13 cyl.; aniseed (@ Königsberg) 109 bgs., (@ Hong Kong) 50 in tr.; annatto seed (@ Batavia) 11, (@ Bordeaux) 7; argol (@ Bordeaux), 258 pkgs.; arsenic (@ Melbourne), 60; benzoin (@ Singapore), 82; bleaching-powder (@ Hamburg), 38; buchu (@ Cape Town), 13; calcium carbide (@ Tréport), 90; calcium chloride (@ Cologne), 67; camphor (@ Hamburg) 15, (@ Havre) 66 cs., (@ Kobe) 90 cs.; canary-seed (@ Hamburg) 200; cardamoms (@ Bombay) 11, (@ Colombo) 100; caraway-seed (@ Rotterdam), 82; chamomiles (@ Ghent), 16; chloral hydrate (@ Rotterdam), 4; cinchona (@ Bombay) 3, (@ Amsterdam) 16; coca leaves (@ Colombo), 4; cochineal (@ Las Palmas) 28, (@ Tenerife) 11; cream of tartar (@ Marseilles) 26, (@ Barcelona) 14, (@ Bordeaux) 177; croton-seed (@ Colombo), 60; cubebs (@ Calcutta), 30; dextrin (@ Stettin), 47; drugs (@ Leghorn) 51, (@ Havre) 112; fennel-seed (@ Salonica) 425, (@ Bombay) 350; gamboge (@ Singapore), 7; ginger (@ Bombay) 29 cs. 361 bgs., (@ Hong Kong) 150 cks.; gum copal (@ Singapore), 100; gum, unenumerated (@ Suez), 287 bgs.; honey (@ Belize) 37 cs., (@ Valparaiso) 23 brls., (@ Jamaica) 40 pkgs., (@ Talcahuano) 100; iodine (@ Valparaiso), 57 kegs; ipecacuanha (@ Rio) 7, (@ Monte Video) 62 bls.; jaborandi (@ Parnahyba), 171; lime-juice (@ Jamaica) 9 cs. 5 puns., (@ Dominica) 50 hlds.; oil, castor (@ Marseilles), 37 brls.; oil, cod-liver (@ Christiania), 12; oil, eucalyptus (@ Melbourne) 229 cs., (@ Adelaide) 16; oil, laurel (@ Bombay), 25 cks.; oil, olive (@ Leghorn), 40 cs.; oils, essential (@ Messina) 40 cs., 26×½ cs., 16×¼ cs., (@ Palermo) 7 cs., (@ Hong Kong) 25, (@ Ostend) 12; oilbany (@ Bombay), 10; opium (@ Smyrna) 36, and 57 in tr., (@ Constantinople) 26; orchella weed (@ Valparaiso), 192; phosphorus (@ Montreal), 135 cs.; pimento (@ Kingston), 59 bgs.; potashes (@ Montreal), 7 brls.; potash chlorate (@ Tréport) 98, (@ Gothenburg) 82; potash oxalate, 15; saccharin (@ Antwerp), 10 cs.; sal ammoniac (@ Cologne), 20; saltpetre (@ Hamburg), 135; sandarac, 14; sarsaparilla (@ New York), 60; seed-lac (@ Madras), 31; shellac (@ Calcutta), 1,468; button lac, 329; soda, acetate (@ Antwerp), 4; soda, chlorate (@ Tréport), 72; soda, prussiate, 15; soy (@ Kobe) 30 tubs, (@ Hong Kong) 300; sugar of lead (@ Rotterdam), 18; sulphur (@ Catania), 466 cks. 1,613 bgs.; tamarinds (@ Calcutta), 41; tartar, (@ Bordeaux) 16, (@ Messina) 15; turmeric (@ Bombay), 209; turpentine (@ Bordeaux), 50; wax, bees' (@ Coquimbo) 19, (@ Bombay) 17, (@ Adelaide) 4, (@ Calcutta) 12, (@ Mossel Bay) 8, (@ Chili) 10 cs. 46 cks., (@ Jamaica) 9; wax, carnauba (@ Hamburg), 24 bls.; wax, ceresin (@ Hamburg), 60; wax, paraffin (@ Calcutta), 160; wax, unenumerated (@ Hamburg) 38, (@ Havre) 64 bls. 16 serons 19 cs.; wax, vegetable (@ Kobe), 186.

Indian Areca.

The Coimbatore correspondent of the "Madras Times" writes on July 24 that this is the commencement of the season for the areca-nut crop. From want of timely rain the areca trees suffered much during last March, April, and May, in consequence of which the crop this year is much less than what it ought to be, though the price is pretty high.

South African News.

(From our own Correspondents.)

Note.—THE CHEMIST AND DRUGGIST is regularly supplied by order to all the members of all the Pharmaceutical Societies in British South Africa, viz.:

SOUTH AFRICAN PHARMACEUTICAL ASSOCIATION.
PHARMACEUTICAL SOCIETY OF CAPE COLONY
NATAL PHARMACEUTICAL SOCIETY.
TRANSVAAL PHARMACEUTICAL SOCIETY.
RHODESIA PHARMACEUTICAL SOCIETY.
NORTHERN DISTRICT CHEMISTS' ASSOCIATION.
PHARMACEUTICAL SOCIETY OF ORANGE RIVER COLONY.

Cape Colony.

The imports of drugs and chemicals during the four months ending April, 1904, amounted in value to 89,000*l.*, against 155,000*l.* for the corresponding period of 1903.

LAST MONTH the Victoria Hotel at Cradock was totally destroyed by fire. Among those who were quartered there at the time was Mr. W. E. Rogers, the representative in South Africa of Messrs. Oppenheimer, Sons & Co., of London, who had a narrow escape and lost much of his personal belongings. Mr. Mills, chemist, Cradock, rendered valuable assistance in the fire-brigade. The Victoria was the largest and oldest hotel in Cradock.

Natal.

SMALLPOX has been unusually active this year in various parts of the Colony, and especially in the upper districts. In Pietermaritzburg there were about thirty deaths among the native population. Durban has at last been visited, writes our correspondent in a letter dated July 30, and every precaution is being taken by the Borough Medical Officer and the Corporation officials to prevent the spread of the disease. At the last meeting of the Durban Town Council, the Borough Medical Officer presented a statement about the death of a native in the town from smallpox, and reported that the Council in committee had approved of the action of a special committee in conjunction with the medical officer to combat the threatened outbreak. Revaccination of the coloured population was agreed upon, and the police departments were instructed to see that no native should be given a badge to work unless he had been previously vaccinated, and also that all coloured persons in the employ of the Corporation should be at once vaccinated. Up to the present no case of smallpox has occurred among the European population. There has been a large demand for vaccination-shields, and of course the supply has already run out. There is plenty of vaccine on hand at present, and large orders have been given for more.

THE TINCTURE QUESTION.—The proposed new tax on tinctures has aroused keen interest among the Natal chemists, and in consequence a well-attended and representative meeting took place in Durban at Mr. H. J. Brereton's on July 25. There were present: Messrs. Brereton, Turner (Maritzburg), Pimm, Elgie, Johnston, Charlton, Edwards, Stranack, Ryan, Read, Buckle, Burn (Lennon Limited), all of Durban; and the following sent letters sympathising with the object of the meeting: Messrs. Rees, Hare, Acton, Anderson, Hamlin, Firth, Warren, of Durban; Messrs. Forsyth (Newcastle), Ross (Dundee), Handley (Greytown), Talbot & Co. (Dundee), Adams (Ladysmith), Brickhill (Estcourt). Mr. Brereton was voted to the chair, and in a brief speech explained the various important points in connection with the question at issue. He considered that the proposed new duty of 15*s.* per proof gallon was the outcome of an attempt on the part of the Cape Government to make up the deficit in their treasury at the expense of the chemists in the South African colonies, and he failed to see why Natal should be mulcted in this manner. He pointed out that the chemists in Natal had been given a definite assurance by a former Prime Minister (Sir Henry Binns) that tinctures would always be allowed to come into the Colony at the *ad valorem* rate, and that this assertion could be verified by looking up "Hansard" of the Natal Legislative Assembly, and was confirmed by Mr. Walton, Cape Colonial Treasurer, as reported recently in THE CHEMIST AND DRUGGIST. He referred to the recent conjoint deliberations of the various collectors of

Customs for the South African colonies, and considered that they had acted *ultra vires* in interpreting the customs tariff in the way they had done. He certainly opposed the intention of the Natal Collector of Customs to bring tinctures under the head of "Spirits," and urged the chemists present to use every effort to bring pressure to bear upon the Government. There were three very important points to be remembered in dealing with the customs union tariff: (1) That no alteration or amendment could be made without the unanimous consent of the various colonies concerned; (2) that in the event of the interpretation of any clause being required, the majority would rule; (3) that the decision of the Supreme Court of any colony, as affecting the interpretation of any clause in the customs union tariff, would be considered final in that colony. Mr. Brereton commented on the easy manner in which this proposed tax had been accepted by the Collector of Customs, and was of opinion that, in the event of the chemists failing to persuade the Government to abandon the duty, the matter should be taken to the Supreme Court for decision. Mr. Turner (who spoke on behalf of the Maritzburg chemists) supported the remarks made by the Chairman, and gave an account of several interviews he had had with the Colonial Treasurer at the Colonial Office in Maritzburg upon the subject under discussion. It appeared to him that the Natal Government were not inclined to follow the lead of the other colonies, to impose the duty as a matter of course, simply to oblige the Cape Government. He had written to the chemists in the Transvaal, asking them to take immediate action in the matter, and form a strong deputation to the Transvaal Colonial Treasurer, and possibly to Lord Milner, to discuss the subject. By this means he hoped that the Transvaal interpretation would fall into line with Natal, and so defeat the Cape Colony's proposal for the new tax. A general discussion followed, and seeing that there was a possibility of further trouble, the meeting decided to form a "Natal Chemists' Association," having for its object the furtherance of trade interests. A working committee was appointed, consisting of Messrs. Brereton, Forth, and Burn, of Durban, and Messrs. Turner and Allanson, of Maritzburg, with power to add to their number.

Transvaal.

MR. ALEXANDER RENNIE, chemist and druggist, of Volksrust and Johannesburg, is on a short visit to Johannesburg. Mr. Rennie has been on the Committee of the local Pharmaceutical Society since 1894, and has done his share of the work towards the passing of the new Bill. He is now looking after his Volksrust branch, and is seldom in Johannesburg.

THE PHARMACY ORDINANCE.—Mr. Bourke, M.L.C., threatened to upset the Company Clause in the Draft Pharmacy Ordinance, but the chemists have been so active and persistent in pressing their claims upon members of the Legislature that full confidence is felt that the measure will be passed unaltered. Chemists are grateful for the wholehearted support given their Bill by Mr. Harry Solomon, Mr. H. C. Hull, and Sir Richard Solomon, particularly.

THE VALUE of Transvaal imports for the first five months of the present year was 5,799,271*l.*, as compared with 3,761,566*l.* for the five months ending May 31, 1903. The imports from and *via* Natal during the first five months of 1903 amounted to 4,175,941*l.* in value, and for the same period this year to 2,550,790*l.* From and *via* the Cape Colony the figures stand: Five months ended May 31, 1903, 4,048,997*l.*; first five months this year, 2,179,570*l.* From and *via* Delagoa Bay, to May 31, 1903, 1,536,628*l.*; to May 31, 1904, 1,068,911*l.* Customs duties collected during the five months ended May 31, 1904, amounted to 712,709*l.* as compared with 961,647*l.* for the corresponding period last year. The figures do not include free importations for local Government or military stores, or railway material imported as Government stores.

THE SPIRIT DUTY.—On July 26 a deputation of the Transvaal Pharmaceutical Society waited upon Mr. Honey, the Director of Customs, at his office at Pretoria. The Society was represented by Messrs. Leeds (Lennon Limited), Johnson (P. J. Petersen & Co.), R. Butters, and Skinn (Turner & Co.), the Secretary, and they placed before the Director various arguments against the imposition of an alcohol duty on medicinal preparations. It was

urged that this was practically a new tax, as it was unanimously agreed at the 1903 Convention that medicinal-preparations should not come under the spirit duty, and the deputation understood that the Natal Government was against this tax—hence it would be a contravention of Article 25 of the Convention to impose it. They pointed out that the tax would fall upon chemists, and it would be practically impossible to recover any appreciable amount from the public. The Cape Colony professedly put the tax forward for revenue purposes, but 15s. per proof gallon was prohibitive and would stop importation; hence the duty was only a protective one and simply meant to foster the Cape spirit industry. As representing the chemists of the Transvaal they intimated that they were particularly averse to suffering this injustice for the benefit of a Cape industry. During the conversation Mr. Honey expressed himself as in favour of the tax. He denied the first contention entirely, asserting that the Transvaal belonged to the Convention along with the Cape and he thought they were compelled to assist the Cape Colony in the matter, especially as the Cape had given up a great deal in the past for the good of the country at large. Further, he considered medicinal-preparations could well bear a tax, and he felt certain that chemists would recover the whole of such tax from the public. He further intimated that Mr. Walton, the Cape Treasurer, was coming to Pretoria in a few days to consult with him, and he thought the tax would be collected in the very near future. He admitted that this duty was a protection to the Cape spirit industry, but also pointed out that it would bring in a certain amount of revenue to the Transvaal. Mr. Honey promised that he would look after chemists' interests to the extent that Transvaal chemists should not be placed in a worse position than the chemists of Cape Colony, and that Cape alcohol would be allowed through for manufacturing purposes at a reduced duty. The section of the Customs schedule dealing with patent and proprietary medicines was then discussed. The Director intimated that the clause would not be altered until the next meeting of the Convention, but in the meantime he would be glad if the Association would submit to him what they considered a workable clause. Finally they talked over Section 3, Part II., of the Fraudulent Marks Ordinance, but Mr. Honey said the matter was in the hands of the Attorney-General, and when he received the Attorney-General's report he would forward the same to the Society and would give them due information and time before taking any proceedings under the Ordinance.

As Mr. Honey, the Director of Customs, Pretoria (who was appointed to that position from Cape Town), is in favour of making a preferential tariff on alcohol in favour of Cape Colony but against Great Britain, the Transvaal chemists have petitioned Lord Milner on the subject as follows:—

THE PETITION OF THE CHEMISTS AND DRUGGISTS OF THE TRANSVAAL.

1. That your petitioners are chemists and druggists residing in the Transvaal.

2. That your petitioners are informed that it is the intention of the Government of the Transvaal to impose a duty on all medicinal-preparations containing alcohol at the rate of 15s. per proof gallon.

3. That your petitioners are strongly opposed to the imposition of this new tax for the following reasons:

(a) Practically the whole of this tax will fall upon the chemists and druggists of this country, and it will not be recoverable from the general public to any appreciable extent. Roughly, it will amount to any sum between 50% and 150% per shop per year.

(b) Chemists and druggists are a very small section of the inhabitants of this country (about 140 shops), hence the amount of money derived from this duty will be comparatively small; and further, the majority of our goods are already heavily taxed, such as patent and proprietary medicines 25 per cent., toilet articles 25 per cent., perfumed spirits 20s. per gallon plus 10 per cent., acetic acid 3s. per gallon, and many of the necessities of life are included under these heads.

(c) Many medicinal-preparations contain small quantities of alcohol, such as 5 per cent., 10 per cent., 15 per cent., and 20 per cent.; these will all be dutiable at 15s. per gallon; hence in some cases we shall have to pay at the rate of 5% per gallon on the actual amount of alcohol.

(d) Practically no medicinal-preparations are or can be used for drinking purposes.

(e) At the Customs Convention, 1898, it was arranged that medicinal-preparations should not be classed as spirits; this was understood and tacitly agreed to at the Customs Conference, 1903, and in support of this contention we may point out that up to the present only 10 per cent. *ad valorem* duty has been charged by the Customs authorities in the various countries concerned. After this long lapse of time the authorities of the Cape Colony desire to do away with this tacit agreement and intimate their intention of classifying all spirituous medicinal-preparations as spirits, and call upon the other parties to the Convention to do the same.

Under the circumstances we consider that this is not a question of the interpretation of a clause in tariff, but distinctly the imposition of a new tax, and therefore an amendment of the tariff.

The Natal Government objects to this new duty; hence to impose it would be in opposition to Article 25 of the Customs Convention, 1903.

(f) If this tax is allowed, a precedent would be established, and we shall be in a continual state of doubt about the duties on other goods which the Customs agreed to exclude from their correct tariff. For example—the duty on essential oils is 25 per cent. Turpentine is an essential oil, but it is not classified as such for Customs purposes, and a duty of 10 per cent. only is imposed on this article.

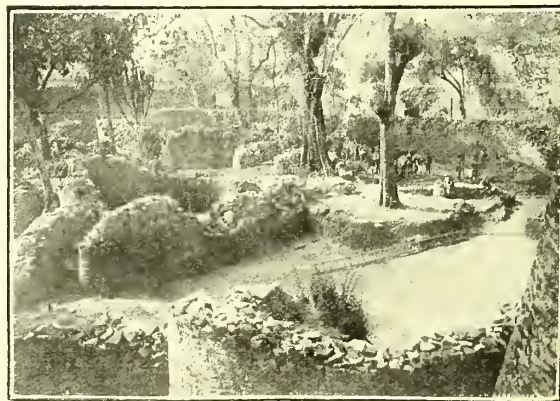
Wherefore your petitioners pray that Your Excellency may be pleased to issue such instructions to the Director of Customs, or officers concerned with the imposition of this duty, as will prevent such regulation being brought into force, or such other relief as to Your Excellency may seem meet.

The petition is signed by sixty chemists and druggists in business in Johannesburg and suburbs alone. A petition has been sent to each of fourteen other towns in the Transvaal, and it is expected that every chemist and druggist in the State will sign it. Mr. Skinn, manager of Turner & Co., has been very energetic in organising this opposition, and Transvaal chemists are indebted to him. The feeling is very strong in official circles in favour of helping Cape Colony.

Rhodesia.

MR. GILBERT E. TRUSCOTT asks us to state that he has not been appointed to the managership of the East London branch of Lennon (Limited), but was transferred from the Bulawayo staff to that of East London.

AN ANCIENT CITY.—Mr. R. N. Hall, F.R.G.S., an authority on the mysterious ruins of prehistoric times, has just arrived from South Africa. Mr. Hall has recently



GREAT ZIMBABWE RUINS, RHODESIA.

From a photograph taken by Mr. C. E. Gray, Chief Veterinary Surgeon to the Rhodesian Government.

completed two years' exploration-work at Great Zimbabwe at the request of the Rhodesian Government, and also three months' examination-work, at the request of Mr. Rhodes's trustees, in the Myanga district, which also abounds in mystery as it contains hill forts, hill terraces, stone-lined pits and galleries, aqueducts, and other relics of some long-

forgotten race. Mr. Hall informed a Reuter's representative that his recent operations at Great Zimbabwe had brought the enigma of these ruins very much nearer solution. His discoveries of new and hitherto unsuspected features of ancient architecture, buried buildings, gold ornaments, and relics representing the period when Phallic worship was practised have been highly important. A large collection of the latter, also of gold and other relics, has been secured. The evidences that Rhodesia was the country from which King Solomon's gold was obtained are fast accumulating. The builders of the more ancient portion of these massive and extensive ruins are believed to have been the Sabaco-Arabians of about 1000 B.C., who at that time were the gold-purveyors of the world. No suggestion has been made that any of the structures were erected by the Phœnicians, but distinct traces of their influence are believed to have been discovered. Mr. Hall's residence among the Makalanga, or "People of the Sun," of the Zimbabwe district has enabled him to secure fresh and important information of high anthropological value. He states that his life at Zimbabwe was an isolated one, and that he did not see a white face for three months at a time.

The Treatment of Leprosy.

By DR. JAMES S. ASHE, M.Ph.S.I., F.C.S., &c.
(Late Professor and Lecturer on Materia Medica Ph.S.I.)

IT may interest some of my pharmaceutical brethren to know something about the new treatment for leprosy as discovered by my friend Captain E. Rost, I.M.S., Rangoon. I have just returned from there, and have seen many cases before, during, and after treatment as well as the preparation of leprolin in all its stages, to which the cure is due.

The first and most important thing is to get over the difficulty of growing the bacillus, and he has discovered a method by extracting the salts from nutrient media, as the bacillus of leprosy will not grow in the presence of salt. In order to make such a nutrient medium he distills beef-extract soaked in pumice-stone in a current of superheated steam, and obtains a medium in which the bacillus will grow with the greatest ease. "Leprolin" is made on somewhat similar lines to those first employed by Professor Koch in the manufacture of tuberculin; over a hundred cases are now being treated in Burmah, and the treatment is also being tried in India.

Already four cases have been cured, and the improvement in most of the cases under treatment is very marked. One case I know of, a Burman, was completely cured in ten days; this was a very bad case, with ulceration of the feet for five years and anaesthesia all over his legs. The most remarkable action of "leprolin" is the suddenness with which sensation returns in those patches where it was lost. "Leprolin" appears to act just as well on the anaesthetic as the nodular varieties, the colour and patches changing to normal in the one, and the nodules and ulceration disappearing in the other. The injections are given once a fortnight, with salt ointment to the areas affected, and salt internally. This now does away with the "fish theory" for the cause of cancer, as there appears to be sufficient salt in the fish to prevent the growth of the bacillus. Captain Rost attributes a great deal of his success in the discovery of his method to Buddhism, into which he is a great inquirer. From it he has founded a theory (not yet published) on the periodicity of the pathogenic organisms which is based on the law of the periodicity of the atomic weights of Mendeléef, and which agrees with some of the tenets of the Buddha. Captain Rost is quite a young man, very quiet, short-sighted, a great enthusiast. He has fitted out a laboratory at his own expense, where he has been for years engaged in his spare time investigating the nature of such diseases as cancer, beri-beri, and tuberculosis. The demand for his "leprolin" has become so great that the local Government have asked the Government of India to place Captain Rost on special duty, with a department to himself, to follow out his work. The first day I was with him his genius impressed me, the second his extreme courtesy and kindness, and the third his modesty. His work is only a few months old, but I am quite assured of his coming fame.

The Art of Dispensing.

THE first edition of this work was published in September, 1888, and so well was it appreciated that five large editions were issued within two years. Six reprints of the fifth edition were issued up to April, 1898, and in 1900 a sixth edition, revised and enlarged by Peter MacEwan, F.C.S., pharmaceutical chemist, Editor of THE CHEMIST AND DRUGGIST, was published. Another edition being required, the opportunity has been taken to thoroughly revise the text and introduce factors and formulae which have been accumulating. The chapter on new remedies has been entirely re-cast, with the idea of increasing its usefulness to dispensers and pharmacists generally. The number of articles dealt with in this chapter has been increased from 250 to 599. The character of the book as a manual for students of pharmacy has been carefully maintained, and forty sets of prescriptions given by the Pharmaceutical Examiners in London and Edinburgh have been included. This new and enlarged edition is bound in strong black buckram, gilt-lettered, and published at 6s., or post free 6s. 4d. It can be obtained at the published price from the following wholesale houses:

Allen & Hanburys (Limited), Bethnal Green, N.E.
Ayrton, Saunders & Kemp (Limited), Liverpool.
Baiss Brothers & Stevenson (Limited), London.
Barclay & Sons (Limited), 95 Farringdon Street, E.C.
Bleasdale (Limited), York.
Duncan, Flockhart & Co., Canongate, Edinburgh.
W. Edwards & Son, 157 Queen Victoria Street, E.C.
Evans Sons Lescher & Webb (Limited), Liverpool, and
60 Bartholomew Close, E.C.
John Gower, Waterloo, near Liverpool.
Hall, Forster & Co., Newcastle-on-Tyne.
Harkness, Beaumont & Co., Edinburgh.
Hirst, Brooke & Hirst (Limited), Leeds.
Hodgkinsons, Clarke & Ward, London.
R. Hovenden & Sons (Limited), London.
John Ismay & Sons, Newcastle-on-Tyne.
H. K. Lewis, Gower Street, W.C.
S. Maw, Son & Sons, Aldersgate Street, E.C.
May, Roberts & Co., Clerkenwell Road, E.C.
F. Newbery & Sons, 27 Charterhouse Square, E.C.
W. Paterson & Sons, Aberdeen.
Pinkerton, Gibson & Co., Edinburgh.
Potter & Clarke, 60 Artillery Lane, E.
Raines, Clark & Co., Edinburgh.
Raines & Co., York.
J. Sanger & Sons, 2 Winsley Street, W.
Southall Brothers & Barclay (Limited), Birmingham.
Sutton & Co., Chiswell Street, E.C.
Wilkinson & Simpson (Limited), Newcastle-on-Tyne.
J. Woolley, Sons & Co. (Limited), Victoria Bridge, Manchester.
Wright, Layman & Umney (Limited), London.
Wyleys (Limited), Coventry.

Australia:

The offices of THE CHEMIST AND DRUGGIST, and most of the wholesale houses.

Canada:

Evans & Sons, Montreal and Toronto.

South Africa:

C. E. Gardiner & Co. (Limited), Port Elizabeth.
Heynes, Mathew & Co., Cape Town.
Lennon (Limited), Cape Town.
P. J. Petersen & Co., Cape Town.
Turner & Co., Maritzburg.

United States:

McKesson & Robbins, New York.

Published at the offices of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

A NEW METHOD OF ADVERTISING.—The German Patent Office is said to have granted the application for a patent for a "speaking advertisement" invention. It is intended that the apparatus, which is based on the phonograph system, should be affixed to doors; these on being opened will put it into action. It is possible, therefore, that in future a man on entering the reading-room of an hotel, a coffee-house, a hairdresser's shop, &c., may be greeted with a screaming advertisement of some speciality.

The New French Codex.

THE "Journal de Pharmacie" publishes in the current issue several of the new or modified formulae for galenical preparations which will appear in the new French Codex. M. M. L. Grimbert, the writer of the article, gives a brief synopsis of the reasons for adopting the several formulae.

Syrupus iodo-tannicus.

The methods of making this preparation are to allow the reaction between the iodine and tannin or extract of rhatany to take place (1) in alcoholic solution, or (2) in the presence of water. After examining various processes it was found that the employment of alcohol as a solvent for the iodine gave a disagreeable flavour to the syrup. The syrup obtained by the use of tannin is preferable to one in which extract of rhatany is employed. Twice the weight of tannin to iodine is a suitable proportion, and the addition of syrup of rhatany is made to give the preparation the colour that is usually expected for this syrup. The formula adopted is founded on that of the Paris Hospitals' Pharmacopœia.

Iodine	...	...	...	2 grams
Tannin	...	...	...	4 grams
Syrup of rhatany	...	...	...	100 grams
Simple syrup	...	...	...	880 grams

Dissolve the tannin and iodine in 60 grams of water in a water-bath, and filter when cold. Mix the filtered liquid with the syrup of rhatany and evaporate to 120 grams; finally add the simple syrup and mix well. Twenty grams of the syrup corresponds to 4 centigrammes of iodine.

The syrup when diluted with an equal quantity of water should not give a blue colour to starch paste.

Syrupus iodo-tannicus phosphoricus.

Iodo-tannic syrup	...	...	980 grams
Monocalcium phosphate	...	...	20 grams

Dissolve.

Twenty grams contain 4 centigrammes of iodine and 40 centigrammes of calcium phosphate.

Vinum iodo-tannicum phosphoricum.

Iodine	...	...	...	2 grams
Tannin	...	...	...	4 grams
Syrup of rhatany	...	...	...	100 grams
Monocalcium phosphate	...	...	...	20 grams
Malaga wine	...	...	...	860 grams

Proceed as in making the syrup, but add the evaporated syrup to the wine, then add the calcium phosphate; set aside for twenty-four hours and filter.

Fifteen grams of this wine contains 3 centigrammes of iodine and 30 centigrammes (0.30) of calcium phosphate.

Extractum Maidis stigmatum.

Corn silk, cut up	...	...	1000 grams
Boiling distilled water, q.s.	...	...	...

Cover the drug with boiling water, let it infuse for two hours, strain, and press. Treat the residue in the same manner, mixing the second infusion with the first. Evaporate the liquid on a water-bath till it weighs 400 grams. Let this liquid cool, add 300 grams of cold distilled water, and after standing filter and evaporate to the consistence of a soft extract.

One part of this extract with ten of water gives a clear solution.

Syrupus Maidis stigmatum.

Extract of corn silk	...	...	12.50 grams
Simple syrup	...	...	990 grams

Dissolve.

Vinum creosote.

The formula adopted in this case is that of the Société des Pharmaciens du Loiret:

Creosote	...	...	...	10 grams
Alcohol (90°)	...	...	...	90 grams
Simple syrup	...	...	...	100 grams
Malaga wine	...	...	...	800 grams

Mix.

Ovules.

The method proposed by M. Crinon is to be adopted, and although the official text will not name a particular brand of gelatin, that known as "Coignet Extra" was found by the Committee to be the most suitable. The gelatin is washed

and rubbed with the fingers to detach any dust that may be on the surface.

Gelatin, washed and dried	...	10 grams
Distilled water	...	30 grams
Glycerin	...	60 grams

Leave the gelatin in contact with the water until all the water has been absorbed, then warm the glycerin and add to it the softened gelatin. Dissolve, strain through linen, and pour into moulds previously wiped with vaseline oil.

Care is to be taken not to heat the gelatin too much, or its cohesion will be destroyed. Medicaments are introduced by dissolving them in the water, or, if insoluble, by rubbing up with part of the water. A concentrated basis (by using only 20 grams of water) may be kept ready made, the 10 grams being added with the medicament when dispensed.

Ovula tannici.

There is a difficulty in making these owing to the incompatibility of the tannin and gelatin; this is got over by using the smallest possible amount of heat in the preparation.

Gelatin, washed and dried	...	10 grams
Tannin	...	3 grams
Distilled water	...	15 grams
Glycerin	...	60 grams

Dissolve the tannin in the cold water, add the gelatin, and leave it until all the water is absorbed; then add the gelatin to the glycerin previously slightly warmed. Strain and pour into moulds.

This makes six ovules of 15 grams, each of which will contain 50 centigrammes (0.50) of tannin.

Trade-marks Applied For.

Objections to the registration of any of the undermentioned applications should be lodged with C. N. Dalton, Esq., C.B., Comptroller-General of Patents, Designs, and Trade-marks at the Patents Office, 25 Southampton Buildings, Chancery Lane, London, W.C., within one month of the dates mentioned. The objection must be stated on Trade-marks Form J, cost £1, obtainable through any money-order office.

(From the "Trade-marks Journal," July 27, 1904.)

"POPLAR," and device; for St. Vincent arrowroot. By Spratt's Patent (Limited), 24 Fenchurch Street, E.C. 260,074.

"TANO"; for a household cleanser. By the Wednesfield Chemical Syndicate (Limited), Rookery Street, Wednesfield, Staffs. 264,102.

"SOLARIS"; for a fruit-juice. By W. Poppelreuter, 54 Portland Street, Manchester. 264,507.

Sketch device of a spider; for perfumery. By Blyth & Platt (Limited), Solar Works, Watford.

"EXCALIBUR"; for perfumery. By Edward Cook & Co. (Limited), East London Soap Works, Bow, E. 264,737.

(From the "Trade-marks Journal," August 10, 1904.)

A representation of a corner of the Charterhouse; for photographic chemicals. By Francis Newbery & Sons (Limited), 27 Charterhouse Square, E.C. 264,802.

"UMRA"; for a disinfecting-powder. By the Umeras Fuel and Moss Litter Works, Monasterevan, co. Kildare. 264,047.

Rhinocereros device; for sulphate of ammonia. By William Duff & Co., 113 Cannon Street, E.C. 264,449.

"SOLVETTE" ("Solve" disclaimed); for antiseptics. By Philip Harris & Co. (Limited), 144 Edmund Street, Birmingham. 264,231.

"ALBORACURA"; for a rheumatism-remedy. By L. Halle, 65 Fordwych Road, West Hamstead, N.W. 263,244.

"TRITURETTE"; for chemicals. By Philip Harris & Co. (Limited), 144-6 Edmund Street, Birmingham. 264,232.

"FLOBO"; for an ointment for human use. By the Scottish Medicine Company, 74 York Street, Glasgow. 264,972.

"DYSPEPLETS"; for chemicals. By C. I. Hood & Co. (Limited), 34 Snow Hill, E.C. 264,988.

"CARBOCELLER" and device ("Carbo" disclaimed); for photographic paper. By the Société Générale Parisienne d'Antisepsie, 15 Rue d'Argenteuil, Paris. 263,796.

"FIXONA" ("Fix" disclaimed); for photographic paper. By the Birmingham Photographic Company (Limited), Stechford, near Birmingham. 264,529.

"VELLITE"; for unmedicated toilet-paper. By Southall Brothers & Barclay (Limited), 19 Lower Priory, Birmingham. 264,733.